

THE EVOLUTION OF AIR AND NUCLEAR DOCTRINE:
THE THEORIES THAT SHAPED SIOP-62

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APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.



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ABSTRACT

This study analyzes the evolution of Airpower doctrine from 1920-1962. The key event in 1962 is the presentation of the nuclear war plan, known as the Single Integrated Operational Plan (SIOP), to President Kennedy. The SIOP integrated the various military service plans and created a master plan for the nation in time of nuclear war. However, when the Chairman of the Joint Chiefs of Staff briefed President Kennedy on SIOP-62, the president rejected the plan as unusable due to its lack of flexibility. This paper asks the question, how is it possible that SAC developed the most deadly war plan in history, SIOP-62, without including the key tenet of airpower, flexibility? To answer this question, the author examines the formation of airpower doctrine at the Air Corps Tactical School (ACTS). Chapter 2 chronicles doctrine developments at ACTS beginning with the school opening in 1920. The chapter concludes with ACTS graduates assigned to the Air War Plans Directorate (AWPD) writing the war plan for the Combined Bomber Offensive in World War II (WWII), known as AWPD-42. Chapter 3 begins with the atomic bomb dropped on Hiroshima, Japan at the end of WWII and documents formation of Strategic Air Command (SAC) and the development of nuclear doctrine. The chapter ends with the writing of the first operational plan for employment of nuclear weapons, known as SIOP-62. Chapter 4 details the specifics of the SIOP and draws comparisons between SIOP-62 and AWPD-42. This study concludes that absolute devotion to the Strategic Bombing doctrine developed at ACTS solidified when SAC formed following WWII. SAC's organizational isolationism, and General Curtis LeMay's enforcement of strict penalties for noncompliance with regulations and highly lucrative rewards for loyalty resulted in the creation of operational plans, which political leaders deemed out of touch with strategic objectives. Chapter 5 makes recommendations to military operational planners and doctrine writers to avoid pitfalls of organizational isolation and doctrinal stagnation. This study of the nuclear doctrine of SIOP-62 provides nuclear planners and policy makers with the perspective needed to understand why current Airpower doctrine exists.

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Chapter 1

Introduction

The traditions among all the armed services are much older than any government, more conservative than any department of government, and more sure to build on a foundation that they are certain of, rather than to take any chance of making a mistake.

- General William "Billy" Mitchell

August 6, 1945, the United States dropped an atomic bomb on Hiroshima, Japan, beginning the atomic age and changing warfare forever. While President Franklin D. Roosevelt made the decision to develop the atomic bomb in 1939,¹ and President Harry S. Truman made the decision to use the weapon in 1945,² it was not a president, but General Thomas T. Handy, the acting Chief of Staff of the Army, that issued the order.³ Since 1945, much has changed regarding how the United States plans to employ nuclear weapons, including the imposition of strict controls that require the execution order to come directly from the president. While the United States adopted several national policies

¹ Dennis M. Drew and Donald M. Snow, *Making Twenty-First-Century Strategy: An Introduction to Modern National Security Processes and Problems* (Maxwell AFB, AL: Air University Press, 2006), 165.

² While Truman repeatedly claimed he alone made the decision to drop the atomic bombs, no official record of an order (either written or verbal) to drop the bombs exists. However, on display in the Truman Library Museum is a copy of the press release dictated by Truman at Potsdam with a hand-written message to "Sec War" stating, "Reply to your 41011, suggestions approved. Release when ready but not sooner than August 2. HST" While it appears to reference release of the press statement, some historians claim it as the only record in existence of Truman authorizing use of the atomic bomb. For a deeper discussion of Truman's involvement in the decision, see Wesley F. Craven and James L. Cate, *The Army Air Forces in World War II, vol 5, The Pacific: Matterhorn to Nagasaki June 1944 to August 1945*.

³ Letter received from General Thomas Handy to General Carl Spaatz authorizing the dropping of the first atomic bomb, 7/25/1945, Series: Black and White Photographs of U.S. Air Force Predecessors' Activities, Facilities, and Personnel, Domestic and Foreign, 1930-1975, Record Group 342: Records of U.S. Air Force Commands, Activities, and Organizations, 1900-2003, National Archives Catalog, accessed online 20 March 2016 at <https://research.archives.gov/id/542193>

regulating nuclear weapons during the late 1940s and 1950s, it would take until 1961 for the United States to have a comprehensive military plan for the employment of nuclear weapons, a plan known as the Single Integrated Operational Plan (SIOP). The first SIOP, designated SIOP-62, created a national master plan intended for use during nuclear war by integrating the various military service nuclear plans.

The creation of SIOP-62 represents a first for joint operational planning for nuclear war; it also required the development of a new joint planning process.⁴ The period 1945-1961 provides nuclear planners and policy makers with the perspective that is vital to understanding current United States nuclear doctrine. The study of nuclear operational planning in this paper focuses on the events and people that shaped United States nuclear doctrine and war plans.

Three distinct groups emerged during this period, and each contributed to the formation of national nuclear policy. These groups were the National Security Council (NSC), the Joint Chiefs of Staff (JCS), and the nuclear planners assigned to Strategic Air Command (SAC).⁵ Each group saw its identity and powers evolve during this time, most notably as a result of the National Security Act of 1947 (NSA) and the act's 1949 amendment.⁶ The NSA created the NSC, formalized the duties and structure of the JCS, and established the independent air force that owned both the nuclear mission and SAC.

The president, however, occupied a unique role at both ends of the hierarchy of nuclear weapons policy. The president was both the

⁴ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-62* (partially declassified and released by Joint Secretariat, Office of the Joint Chiefs of Staff, April 1980), 28.

⁵ David Allen Rosenberg, "U.S. Nuclear War Planning, 1945-1960," in *Strategic Nuclear Targeting*, edited by Desmond Ball and Jeffrey Richelson (Ithaca, NY: Cornell University Press, 1986), 36-37.

⁶ The NSA established the NSC, formalized the role of the JCS, and created the separate Air Force as lead force provider for SAC.

initiator of policy formation to the NSC and the end user of the nuclear war plans developed by SAC. Due to this unique system, nuclear war planning provides an excellent case study in how policy makers and planners interpret, manipulate, and eventually use strategic guidance from a president and key members of their administration, to support the perceived needs of a bureaucratic organization.

Thesis Statement

Nuclear weapons provide a military force so powerful that only the president has the power to decide when to employ them. Nuclear war plans, therefore, become instruments of both foreign policy and national security. Prior to development of the SIOP, each military service planned independently for nuclear war. When President Dwight D. Eisenhower directed the creation of the first SIOP for nuclear war in 1960, he unwittingly revolutionized the operational art of nuclear war planning and created a standard for future war plans.⁷ Later, President John F. Kennedy would dismiss as “overkill” the plan that essentially embodied the concept of Massive Retaliation, with thousands of nuclear strikes against every communist and Sino-Soviet bloc country.⁸

The military, like all bureaucracies, is an organization intent on self-preservation. If isolated from outside influences and provided the right bureaucratic controls, it will, again like any bureaucracy, develop mechanisms to justify vast increases in material, manpower, and money. SIOP-62 is the result of institutional isolation of doctrine, leadership, and innovation by the Air Force in general and SAC in particular. This paper discusses the policies and strategies from the dawn of the nuclear age. Specifically, this study examines the formation of air doctrine leading

⁷ Scott D. Sagan, *Moving Targets: Nuclear Strategy and National Security* (Princeton, NJ: Princeton University Press, 1989), 25.

⁸ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 28.

into nuclear doctrine and provides an evaluation of SIOP-62 as an instrument of bureaucratic control and overreach.

Methodology

Research for this thesis relied heavily on primary sources found in the presidential libraries of Harry S. Truman, Dwight D. Eisenhower, and John F. Kennedy. Source documents included many declassified NSC papers and commissioned reports. However, documents regarding the employment of nuclear weapons contain the nation's most closely guarded secrets and, therefore, much of that material remains classified. Fortunately, several partially declassified documents provide invaluable insights into nuclear planning during the 1940s and 1950s. The Office of the Historian for United States Strategic Command also provided a very thorough declassified history of the Joint Strategic Targeting Planning Staff and Strategic Air Command.

The primary source on SIOP-62 is a declassified (previously top secret) transcript of the September 13, 1961, briefing by Chairman of the Joint Chiefs of Staff, General Lyman L. Lemnitzer, to President John F. Kennedy detailing the newly developed nuclear war plan. While many scholars have written about the SIOP, Scott D. Sagan provided the best account of it in an article in the summer 1987 issue of *International Security*, less than one year after the declassification of this briefing.

This paper will document the development of SIOP-62, focusing on the ideas, people, and weapons that shaped our nation's first nuclear war plan. Chapter 2 chronicles the formation of strategic bombing doctrine beginning with the creation of the Air Corps Tactical School (ACTS) through the end of WWII. ACTS created the foundation for an independent Air Force based upon the idea of strategic bombardment, the development of air-minded leaders, and the primacy of a long-range bomber. The intellectual effects of their efforts persist today.

Chapter 3 begins with the decision to drop the atomic bombs on Hiroshima and Nagasaki, Japan, and ends with President Eisenhower's

approval of SIOP-62. Following WWII, the newly formed SAC assumed control over the nuclear mission and set about translating conventional strategic bombing doctrine into nuclear doctrine.⁹ Generals Curtis LeMay and Thomas Power established SAC as a powerful bureaucracy by claiming to be the only organization capable of defeating the Soviet Union. This promise earned SAC the lion's share of many Cold War defense budgets and enabled the development of an unrivaled arsenal of nuclear weapons, bomber aircraft, and intercontinental ballistic missiles (ICBMs).

Chapter 4 begins with the presentation of the SIOP briefing to President John F. Kennedy on September 13, 1961, and provides an analysis of the plan's adherence to the strategic bombing doctrine outlined in Chapter 2 and nuclear doctrine from Chapter 3. Following the SIOP briefing, Kennedy immediately dismissed the plan and its strategy of Massive Retaliation. Therefore, this event marks both Kennedy's first official knowledge of the plan and the moment the plan became obsolete. Chapter 5 itemizes conclusions and recommendations based on this study for the formation of military doctrine.

To prevent total war with the Soviet Union, President Kennedy required the ability to wield nuclear weapons in such a way as to threaten any adversary and assure every ally. From 1945-1961 nuclear war plans consisted of a series of independent and overlapping theater-level nuclear plans. SAC created the SIOP to provide the president an integrated operational plan supporting a single national strategy. The credibility of this strategy was based on the clear explanation of intent (declaratory policy), the forces available to execute the intent (force acquisition policy), and the actual plans to carry out the intent (employment policy).¹⁰ These policies must complement one another for

⁹ Stephen Younger, *The Bomb: A New History* (New York: HarperCollins, 2009), 47.

¹⁰ Desmond Ball, *Adelphi Paper No. 185: Targeting for Strategic Deterrence* (London: The International Institute for Strategic Studies, 1983), 37.

each to be effective. If there is a wide gap between declaratory policy (what nations say they will do) and employment policy or force structure (what nations can do or have the forces to do it with), then the country's nuclear war plans are nothing more than a bluff and lack deterrent value.¹¹

Since 1945, United States political leaders have relied on declaratory and force acquisition policies to regulate the military's nuclear employment policy. This paper examines how the Air Force used its belief in the doctrine of strategic bombing to justify the behavior of SAC leaders who fought for unprecedented levels of weapons, personnel, and aircraft. SIOP-62 and its formation provide an excellent historical case study in how institutions that become isolated from critics and competitors form mechanisms for self-preservation based upon dogmatic belief in doctrine, unquestioned loyalty to leaders, and self-perpetuating requirements for additional resources. The following chapters of this thesis will examine the key ideas, people, and technologies formed from 1920-1961 to understand how they influenced SIOP-62, the first national plan for nuclear operations.

¹¹ Stephen J. Cimbala, "The SIOP," *Airpower Journal* (Summer 1988), accessed May 23, 2015, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj88/sum88/cimbala.html>.

Chapter 2

Development of Air Force Doctrine

The only thing harder than getting a new idea into a military mind is getting an old one out.

- B. H. Liddell Hart

The early days of airpower resemble a mass movement. Eric Hoffer wrote that “mass movements are pioneered by men of words, materialized by fanatics and consolidated by men of action.”¹ In a call for radical change, early airpower prophets advocated for independent air forces. To put this movement into Eric Hoffer’s words, William “Billy” Mitchell acted as the “man of words” while the team of “fanatic” instructors at the Air Corps Tactical School (ACTS) materialized theory into practice. During WWII, General Henry “Hap” Arnold became the “man of action” and realizing the doctrine of strategic bombardment was the movement’s unifying cause.

Doctrine is the military’s answer to the question of how best to fight a war. For military forces, doctrine is the bridge between theory, strategy and operations. It stems from military theory and provides strategic options to military planners. Doctrine reflects the judgment of military professionals regarding what is possible and necessary to conduct operations. It is the operationally relevant, agreed upon best practices for how the military organizes and employs forces for war.²

Following WWI, the U.S. Army looked to rewrite the doctrine that led to the bloody stalemate of trench warfare. The doctrine of maneuver

¹ Eric Hoffer, *The True Believer: Thoughts on the Nature of Mass Movements*, (New York, NY: HarperCollins Publishers, 2002), 147.

² US Air Force, *The Value of Doctrine* (Maxwell Air Force Base, AL: LeMay Doctrine Center slideshow, <https://doctrine.af.mil/> Doctrine for Newcomers, accessed 15 March 2016).

warfare began to emerge as the answer to long, costly wars of attrition.³ The inherent speed, mobility and flexibility of airpower showed promise in augmenting ground force maneuverability in battle. Recognizing the growing utility of its Air Service, the Army established the Air Service Field Officer's School, at Langley Field, Virginia, in 1920. The school recognized aviation as a distinct specialty within the Army and served as the center for doctrinal thinking on airpower.⁴ In 1926, Congress passed the Air Corps Act, establishing the Army Air Corps, which effectively changed the school's name to the Air Corps Tactical School (ACTS). In 1931, the school moved to Maxwell Field, Alabama where the theories inspired and developed by the instructors soon became doctrine.⁵

Types of Doctrine

Prior to the creation of ACTS, the Army did not have an air doctrine. The school's instructors theorized about the employment of airpower and applied their own experience to validate their ideas. Traditionally, there are three basic types of military doctrine: offensive, defensive and deterrence. Offensive doctrines focus on seizing the initiative to disarm the adversary and win a clear victory by defeating his armed forces. Military forces associated with offensive doctrines consist of large forces prepared to attack early or preemptively, if possible. Barry Posen points out that on the eve of WWI all of the major land powers had offensive doctrines. Also known as the "cult of the offensive," the widespread use of offensive doctrine is credited as a major contributor to the quick escalation of hostilities in WWI.⁶ Nevertheless, the U.S. Army

³ Walter E. Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror* (Lawrence, KS: University Press of Kansas, 2011), 145.

⁴ Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907-1960* (Maxwell Air Force Base, AL: Air University Press, 1989), 62.

⁵ Futrell, *Ideas, Concepts, Doctrine*, 63.

⁶ Barry Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars* (Ithaca: Cornell University Press, 1984), 14-15.

and ACTS remained committed to the idea that an offensive doctrine was necessary to win wars.

Defensive doctrines seek to deny the enemy from achieving an objective by preventing an aggressor from defeating the army, capturing the government or invading the defender's homeland.⁷ Following WWI, France employed an infamous strategic defensive doctrine symbolized by the barrier it used to separate itself from Germany known as the Maginot Line. The French defense came to epitomize the failure of a purely defensive posture because of the ease with which the German Army bypassed the barrier.⁸

Finally, deterrent doctrines threaten to punish an aggressor in order to manipulate the cost/benefit analysis of the enemy, making aggression seem irrational.⁹ According to Barry Posen, deterrence is the "persuasion of one's opponent that the costs and/or risks of a given course of action he might take outweigh its benefits."¹⁰ A deterrent doctrine requires military forces capable of inflicting enough punishment that the adversary decides it is ultimately unwilling to bear the cost. Similar to defensive doctrines, deterrent doctrines relinquish the initiative to the enemy. The military forces are postured and ready to act, but only after provocation. However, once provoked the state should have a force sufficiently strong enough to inflict a punishing blow upon the aggressor. A doctrine based solely on deterrence does not require a force strong enough to destroy the enemy army, but to inflict sufficient levels of destruction in order to deter hostilities.¹¹

⁷ Posen, *The Sources of Military Doctrine*, 14-16.

⁸ Posen, *The Sources of Military Doctrine*, 15.

⁹ Posen, *The Sources of Military Doctrine*, 14.

¹⁰ Alexander George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974), 11.

¹¹ Posen, *The Sources of Military Doctrine*, 24.

War is politics by other means and ideally, nations develop military doctrines that align with their political objectives.¹² Offensive doctrines promote conquest and focus on initiating war to gain a quick victory. Defensive doctrines allow nations to preserve the status quo of international relations, if attacked. Deterrence doctrines threaten potential aggressors with punishment to prevent them from attacking. In short, nations adopt offensive doctrines to win wars, defensive doctrines to avoid losing wars, and deterrence doctrines to prevent wars. In the 1920s, airpower theorists searched among their broad ideas for a doctrine to fit the new capability airpower provided.

Billy Mitchell: The Idea Man

In the years following WWI, General William “Billy” Mitchell became an outspoken advocate for airpower. His aggressive and belligerent style earned him a reputation as a maverick.¹³ He advocated for an independent air force and claimed that armies and navies were now obsolete due to the ability of airpower to dominate the surface of the Earth and thereby win wars. He openly and directly accused Army and Navy leaders of “incompetency, criminal negligence, and almost treasonable administration of the National Defense.”¹⁴ In 1925, the Army court-martialed and convicted Mitchell for insubordination. Following his very public trial where he garnered press headlines for professing the potential of airpower, he left the military and continued to write and speak publicly in support of airpower for national defense.

Mitchell’s views on airpower went beyond those of previous advocates, such as Giulio Douhet, who saw airpower as a purely offensive capability. Mitchell saw airpower’s potential to execute offensive, defensive and deterrent doctrines. Mitchell called for a mixed

¹² Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret. (Princeton, N.J.: Princeton University Press, 1989), 87.

¹³ William “Billy” Mitchell, *Winged Defense* (Tuscaloosa, AL: University of Alabama Press, 2009), vi.

¹⁴ Mitchell, *Winged Defense*, iv.

air force of pursuit aircraft to patrol and defend the skies, attack aircraft to engage enemy ground forces, and bombing aircraft to strike enemy targets, rather than merely the all-bomber force Douhet advocated.¹⁵ Mitchell also wrote about airpower's ability to deter against aggressive adversaries.¹⁶

Billy Mitchell began an airpower narrative within the Army Air Corps that framed the debate for many years. He promoted a vision of an air force centered on five key issues: first, the importance of long-range bombardment to defeat enemy will;¹⁷ second, the effectiveness of targeting enemy centers of industrial production and population to achieve strategic effects;¹⁸ third, the need for air-minded leaders to command air forces;¹⁹ fourth, the necessity for continuous improvements in the design and production of aircraft and equipment;²⁰ and fifth, an airpower capability so dominant that it required the ability to act independently from army and navy operations.²¹

Hap Arnold once commented on Mitchell's struggle saying that "military aviation really couldn't have amounted to very much then, even if everybody had agreed with him."²² Nevertheless, Mitchell's outspoken activism and thorough regard for airpower made him "one of the most significant air power theorists in the history of manned flight," according to historian Robert Ehlers, Jr.²³ However, it would take a second world war before the nation's air capabilities could measure up to Mitchell's vision. In the meantime, Mitchell's public defiance of Army leadership showed a rousing courage to his fellow aviators. Characteristic of Eric

¹⁵ Michael S. Sherry, *The Rise of American Air Power: the Creation of Armageddon* (New Haven, CT: Yale University Press, 1987), 31.

¹⁶ Sherry, *The Rise of American Air Power*, 29-31.

¹⁷ Mitchell, *Winged Defense*, 9.

¹⁸ Mitchell, *Winged Defense*, 16.

¹⁹ Mitchell, *Winged Defense*, 159.

²⁰ Mitchell, *Winged Defense*, 181.

²¹ Mitchell, *Winged Defense*, 215.

²² Sherry, *The Rise of American Air Power*, 31.

²³ Mitchell, *Winged Defense*, vi. (Introduction by Robert Ehlers, Jr.)

Hoffer's "man of words," Mitchell "prepared the ground for the rise of the mass movement" and his commitment inspired something akin to fanaticism among his fellow airmen toward airpower.²⁴ The instructors at Maxwell took notice of Mitchell's narrative and devoted themselves to building upon his vision.

Development of Strategic Bombing

In 1928, the faculty at ACTS revised their curriculum and sparked an airpower revolution. Thus far, the curriculum promoted the experience of World War I. In that war, observation and pursuit aircraft employed in support of ground operations, became the dominant use of airpower.²⁵ Lieutenant Colonel C.C. Culver, the school's commandant, pursued a curriculum that reinforced the established Army Air Corps view of the air component's primary mission to support the ground forces. However, Major General James E. Fechet, Chief of the Air Corps, refuted this idea by stating, "the objective of war is to overcome the enemy's will to resist, and the defeat of his army, his fleet or the occupation of his territory is merely a means to this end and none of the them is the true objective."²⁶ As a veteran of WWI, Fechet noted the potential of airpower first hand. His guidance signaled to the ACTS cadre that a new focus was necessary.

ACTS texts and lectures from 1920 through 1927 on the employment of airpower in WWI merely recited the operational record.²⁷ However, in 1928, the lectures began to challenge the students to consider alternate ways airmen could have used airpower during the war. This shift toward critical thinking marked the beginning of a debate that still influences Airmen today.

²⁴ Hoffer, *The True Believer*, 140.

²⁵ Robert T. Finney, *History of the Air Corps Tactical School: 1920-1940* (Bolling AFB, DC: Air Force History and Museums Program, 1998), 21, 67.

²⁶ Futrell, *Ideas, Concepts, Doctrine*, 63.

²⁷ Finney, *History of ACTS*, 21.

Key participants in this airpower debate were Kenneth. N. Walker, Haywood Hansell, Harold L. “Hal” George, Claire L. Chennault and Lawrence S. Kuter. Collectively they influenced the air doctrine of WWII and individually, each of them played a significant role in shaping ideas at ACTS. The following paragraphs document their contributions.

While Mitchell campaigned for the incorporation of airpower into national military policy, his former subordinates became the ACTS instructors who put the theories into practice. In 1932, Lieutenant Kenneth Walker joined the ACTS faculty. Walker was a former aide to General Mitchell and shared Mitchell’s views on aviation. As an instructor in bombardment aviation at ACTS, Walker used the classroom to develop, expand upon and continue Mitchell’s work.²⁸

Walker argued that an air force should focus on bombardment aviation as its dominant arm. He noted that although antiaircraft fire was a threat to bomber formations, it could not stop a determined attack.²⁹ While pursuit aircraft posed a danger, bomber performance at this time rivaled if not exceeded that of enemy fighters. By equipping bombers with defensive guns, Walker argued that bomber formations could discount the threat of enemy fighters. Walker is perhaps best remembered for his often cited lecture point of “a determined air attack, once launched, is most difficult, if not impossible, to stop when directed against land objectives.”³⁰

Another noteworthy instructor at ACTS, Captain Claire Chennault, opposed Walker’s assertions. Chennault taught at ACTS from 1931 to 1936 and was the most outspoken advocate of pursuit aviation.³¹ Pursuit aviation is the use of fighter aircraft to gain air superiority to

²⁸ Finney, *History of ACTS*, 21.

²⁹ Phillip S. Meilinger *Bomber: The Formation and Early Years of Strategic Air Command*, (Maxwell Air Force Base, AL: Air University Press: 2012), 18.

³⁰ Meilinger, *Bomber*, 18; Finney, *History of ACTS*, 76; Futrell, *Ideas, Concepts, Doctrine*, 64.

³¹ Finney, *History of ACTS*, 76.

enable air or ground operations. Even though pursuit took prominence over bombing in WWI, much of the ACTS curriculum focused on bombardment as the decisive capability of airpower. While Chennault aggressively advocated for pursuit, his ideas represented the minority view at ACTS.³² He argued that the bomber would not always get through, and a well-organized and capable defense would be able to meet and defeat an enemy air attack.³³ Known by his peers for having an abrasive personality, Chennault made his opinions clearly known. In one lecture, he chastised his fellow instructors. “This lack of regard for hostile opposition is a theory which has no foundation in experience.”³⁴ In post-war interviews, Chennault’s peers noted that his abrasive personality caused many to dismiss his opinions.

Chennault’s observations revealed a key shortcoming in the ACTS argument. Bomber advocates like Walker based their belief in bomber supremacy on pure theory rather than experience. The theory was even more abstract due to the stubborn fact that no bomber aircraft existed with the range and destructive capacity necessary to test it.³⁵ Nor, on the other hand, was there a pursuit aircraft that could keep pace with the bombers.³⁶ The debate continued until Chennault left ACTS in 1936. This signaled the end of the pursuit vs. bombardment debate. After Chennault’s departure, ACTS accepted the dominance of the bomber as doctrine.³⁷ Further, with the arrival of the B-17 bomber, ACTS instructors declared any concept that included “bomber's being escorted by pursuit would have to be based on a fighter aircraft that did not

³² Finney, *History of ACTS*, 77.

³³ Meilinger, *Bomber*, 19.

³⁴ Claire Chennault, Captain, “Pursuit Aviation,” ACTS lecture, September 1933, AFHRA, file 248.101-8.

³⁵ Finney, *History of ACTS*, 67.

³⁶ Finney, *History of ACTS*, 67.

³⁷ Finney, *History of ACTS*, 67.

exist,” and therefore completely unnecessary.³⁸ This solidified the concept of bomber invincibility.

By the late 1930s, bomber aircraft were the preferred weapon for achieving air superiority according to ACTS curriculum.³⁹ This reflected the importance bomber advocates placed on establishing an offensive doctrine. Bombers would establish air superiority by destroying enemy aircraft on the ground and destroying aircraft factories and infrastructure. ACTS theorists argued that “self-defending” bombers would overcome enemy pursuit aircraft to eliminate adversary air forces. During WWII, US and British bombers took heavy losses; however, the establishment of the “cult of the offensive” at ACTS is critical to later understanding thinking at Strategic Air Command.

ACTS continued to teach aerial pursuit doctrine; however, within the school’s curriculum the use of pursuit aircraft changed from that of gaining air superiority to one of air base defense and bomber escort.⁴⁰ ACTS no longer considered pursuit an offensive use of airpower. Instructors taught pursuit as a defensive force through the last session of the school.⁴¹ Certain that bombers could penetrate enemy defenses, the ACTS instructors set out to identify the most effective targets.

Industrial Web Theory

As early as 1926, an ACTS text entitled, *Employment of Combined Air Force*, asserted a new objective in warfare. It discussed using airpower to strike the vital points of a nation's structure rather than to conduct exhausting wars of attrition as a means of achieving the military objective with the least possible cost to both friend and foe.⁴² This philosophy meant airpower should target neither enemy ground nor air

³⁸ Finney, *History of ACTS*, 68.

³⁹ Futrell, *Ideas, Concepts, Doctrine*, 82.

⁴⁰ Finney, *History of ACTS*, 77.

⁴¹ ACTS text, *Pursuit Aviation*, October 1937, p 65. The same statement is repeated in the Pursuit texts dated Oct 38 and Sep 39. As cited in Finney, *History of ACTS*, 77.

⁴² Finney, *History of ACTS*, 63.

forces. This departed from the accepted Clausewitzian notion of military forces in war focused on achieving three broad objectives: destruction of enemy forces, occupation of the country, and defeat of the enemy's will to resist.⁴³ ACTS began to teach airmen to forego direct destruction of enemy forces and occupation of the enemy's country. Instead, airpower should move straight to objective three, defeating the enemy's will.

In order to defeat the enemy will, ACTS instructors looked to "vital centers" and critical infrastructure of the modern industrial nation. They found a connection between the infrastructure that provided the means of war to the armed forces and the infrastructure that provided the means of sustaining civilian life.⁴⁴ A single blow could render elements common to both, such as electric power, inoperative, thereby crippling the military and garnering a bonus effect upon the civilian population. Interestingly, ACTS instructors believed airpower could destroy these targets without first having to win air superiority. Instead, the strategic air war against the industrial fabric of a nation could and should begin immediately upon the outbreak of hostilities at the expense of a counter-air campaign. However, to be ready to wage such an air war, the US needed large air forces. Similar to other ACTS principles of airpower, theory alone guided this notion.⁴⁵ Actual experience in war against would later prove it false.⁴⁶

A 1938 ACTS text explained the theory of the industrial web. "The economic structure of a modern highly industrialized nation is characterized by the great degree of interdependence of its various elements. Certain of these elements are vital to the continued functioning of the modern nation. If one of these elements is destroyed

⁴³ Clausewitz, *On War*, 90.

⁴⁴ Finney, *History of ACTS*, 37.

⁴⁵ Finney, *History of ACTS*, 75.

⁴⁶ Tammy Davis Biddle, *Rhetoric and Reality in Air Warfare: The evolution of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton: Princeton University Press, 2002), 131

the whole of the economic machine ceases to function . . . Against a highly industrialized nation air force action has the possibility for such far reaching effectiveness that such action may produce immediate and decisive results.”⁴⁷ It was expected that airpower would do so without the awful attrition suffered in WWI.

To develop the industrial web targeting theory ACTS instructors studied infrastructure in the northeastern US, specifically, New York City, Boston, Cleveland, Cincinnati, Detroit, and Pittsburgh. They determined that 100 well-placed bombs could shut down 75 percent of the region’s electrical generating capacity.⁴⁸ Starting in 1938, ACTS incorporated this exercise into the official instruction on targeting. However, the instructors falsely assumed the US economy was similar to foreign economies. Additionally, the enemy might attempt to defend, disperse, hide or protect its vital infrastructure or industry. WWII would demonstrate each of these issues.⁴⁹

A key element of industrial web targeting depended on accuracy. In 1935, Lieutenant Laurence S. Kuter taught a course in *Bombing Probabilities* at ACTS.⁵⁰ Kuter emphasized precision bombing by teaching “where the objective is a large industrial center, individual bombers must hit specific buildings or areas or the mission may be a failure. It is thus evident that the destruction of material objective—the reason for the existence of our arm—depends on the ability of bombardment to hit small targets.”⁵¹ Kuter’s curriculum suggests an

⁴⁷ ACTS, “Air Force” text in “Air Warfare” section, 1 February 1938, AFHRA, 248.101-1, as cited in Finney, *History of ACTS*, 33.

⁴⁸ “Committee Study on the Northeastern Theater,” 31 January 1936, AFHRA, file 248.501-33; “Electric Power Industry in Northeastern United States,” Memo for Commandant, 14 February 1935, AFHRA, file 248.211-29; “Thesis on the Attack of New York City from the Air,” 16 February 1931, AFHRA, file 248.211-28A; and Kreis, *Piercing the Fog*, 26–27. As cited in Meilinger, *Bomber*, 28 note 72.

⁴⁹ Meilinger, *Bomber*, 28.

⁵⁰ ACTS, Bombardment Aviation course, “Bombing Probabilities,” 18 October 1935, AFHRA, 249.222, 2.

⁵¹ ACTS, “Bombing Probabilities,” 2.

early understanding that key node targeting required precision bombing. The desire for daylight bombing to increase accuracy was apparent. Airmen would discover the difficulties of selecting key nodes during WWII.

In 1939, Major General Henry “Hap” Arnold, Chief of Air Corps, directed ACTS to suspend the regular nine-month course and institute a series of short courses in order to increase the number of graduates.⁵² Four courses lasting 12 weeks each with a condensed curriculum sought to ensure as many air officers as possible attended the school. ACTS planned to resume the normal nine-month course after a year; however, the war in Europe changed the nation’s focus. Upon completion of the series of 12-week courses, ACTS closed. The final ACTS class ended on 30 June 1940 and a critical era in the history of airpower closed.⁵³ Airmen no longer had an intellectual center devoted to critical thought. The concept of daylight precision bombing of critical targets to the defeat enemy’s will to resist would remain the height of airpower theory through WWII.⁵⁴

AWPD-1

In 1941, President Franklin Delano Roosevelt asked the Army, Navy and the recently redesignated Army Air Force to determine how many tanks, ships and aircraft would be needed to defeat Germany. Hap Arnold turned to his Air War Plans Division (AWPD) for the answer. The AWPD staff consisted of Lieutenant Colonels Hal George and Ken Walker and Majors Haywood Hansell Jr. and Larry Kuter. All four were instructors at ACTS and had played key roles in formulating the doctrine that grew out of the course of years of theoretical debate: high-altitude, daylight formation, precision bombing of an enemy’s industrial centers.⁵⁵

⁵² Finney, *History of ACTS*, 79.

⁵³ Finney, *History of ACTS*, 81.

⁵⁴ Biddle, *Rhetoric and Reality*, 131.

⁵⁵ Meilinger, *Bomber*, 38.

The AWPD staff started on AWPD-1, 4 August 1941, and completed it in nine days. Secretary of War Henry Stimson approved it on 12 September 1941. While the Allies did not use AWPD-1 in an operational sense, it proved a good starting point for the plan eventually used during the Combined Bomber Offensive (CBO) of WWII. The AWPD War Plan series consisted of AWPD-1, -4, and -42. AWPD-4 was written in December 1941 immediately after Pearl Harbor, and AWPD-42 in the fall of 1942 in response to President Roosevelt's directive to defeat the Luftwaffe.⁵⁶

The AWPD staff recognized three tenets of airpower developed at ACTS:

(a) Modern states are dependent upon an interwoven industrial base to produce war material and support their standard of living.

(b) Precision bombing with suitable weapons is practical and possible.

(c) Strategic Air Forces could use speed, initiative, deception, altitude, defensive formations, and gunfire to penetrate defenses and bomb interior targets with "acceptable" losses.⁵⁷

AWPD staff applied these tenets to AWPD-1 and this formed the basis for AWPD-42, the war plan used during the CBO.⁵⁸ The warning that long-range escort fighters might be necessary proved true. There were, however, other errors in the planners' thinking such as German industry was more resilient and German morale tougher than expected, and allied bombing accuracy was worse than projected. Nonetheless, the theories formed at ACTS provided the foundation of the CBO.

Prior to WWII, airpower doctrine was based upon theoretical air war; however, on 1 September 1939, Hitler invaded Poland and the

⁵⁶ James R. Cody, Major, USAF, *AWPD-42 to Instant Thunder: Consistent, Evolutionary Thought or Revolutionary Change*, School of Advanced Airpower Studies Thesis, 7.

⁵⁷ Haywood S. Hansell Jr., *The Air Plan That Defeated Hitler* (Atlanta, GA: HigginsMcArthur/Longino and Porter, 1972), 40.

⁵⁸ Meilinger, *Bomber*, 41.

Luftwaffe, Germany's powerful air force, put air war to the test. Lieutenant Colonel Donald Wilson, an ACTS instructor, wrote just days after the invasion began that Hitler's air force was "demonstrating our theories."⁵⁹ However, General Arnold did not share ACTS enthusiasm for what he saw. On 14 November 1939, Arnold declared the Luftwaffe's performance proved the doctrine that fighter aircraft could not shoot down large bombardment formations was "wholly untenable."⁶⁰ Further, he blamed lessons taught at ACTS for leading airmen astray. By the end of the war, it was clear that the oversights in doctrine development at ACTS caused several problems for the US during the CBO.

Lesson from the CBO

The CBO provided several lessons for airmen. First, the bomber did not always get through. The B-17, known as the *Flying Fortress* for its heavy defensive armament, had a 25% loss rate of aircraft through the beginning of 1944. As a result, pursuit aircraft began to fly with bombers on missions. When Jimmy Doolittle arrived and assumed command of Eighth Air Force he famously replaced a sign in the unit headquarters stating "The mission of 8AF Fighters is to Bring the Bombers Home" with "The Mission of 8AF Fighters is to Kill German Fighters." This shift in focus enabled the pursuit aircraft to engage against the enemy fighters and shoot them down to remove the threat.

Second, selecting key nodes in an enemy's economy or industrial base was difficult. The CBO employed the Industrial Web theory of targeting against key nodes in Germany. First, the planners selected ball bearing factories. However, as historian Tammy Davis Biddle wrote "only those commodities for which there were no ready substitutes were really candidates for 'key node' status."⁶¹ It was not until late in the offensive

⁵⁹ Futrell, *Ideas, Concepts, Doctrine*, 96.

⁶⁰ Futrell, *Ideas, Concepts, Doctrine*, 96.

⁶¹ Biddle, *Rhetoric and Reality*, 291.

when the allies shifted to oil as the primary target that they saw the results predicted in interwar ACTS thinking.

Third, bombers rarely achieved the accuracy needed to hit pinpoint targets in the war. ACTS instructors noted that crippling an industrial nation without causing massive destruction would require precision strikes. However, the ability to hit the desired target while under fire at high altitudes proved far more difficult than imagined. Many bombs did not hit their targets while the calculations for the number of bombs needed to strike a target were also wrong. Ultimately, airmen learned in combat that many of the assumptions taught at ACTS were untrue.

Conclusion

The person with the greatest influence on the airpower theories developed at ACTS was Billy Mitchell. Mitchell was the first American airman to consider bombardment as the dominant arm of aviation.⁶² Brigadier General Lawrence S. Kuter stated in 1942, “[Mitchell’s] Notes on the Multi-Motored Bombardment Group, Day and Night, was the basis of instruction in the Air Corps Tactical School from its inception.”⁶³ According to the official ACTS history, “When instructors at the school began to graft the concept of the primacy of the bomber onto the concept of air warfare and strategic air operations, they were consciously or unconsciously providing the covering for the skeleton built by Mitchell.”⁶⁴

Concepts formed at ACTS regarding airpower shaped the doctrine used to create AWPD-1 and AWPD-42. The ideas formed and taught at ACTS such as Strategic Bombardment, the Industrial Web theory, High-Altitude, Daylight Precision employment, and bomber invincibility all shaped the common thought of US airmen during WWII.

⁶² Finney, *History of ACTS*, 56.

⁶³ Draft, interview with Brig Gen Laurence S. Kuter by Maj C. W. Williams, 21 Oct 42, in 101-10A, as cited in Finney, *History of ACTS*, 65.

⁶⁴ Finney, *History of ACTS*, 57.

During WWII, ACTS graduates dominated AAF leadership. At the close of the war, 261 of the 320 general officers remaining on active AAF duty graduated from ACTS.⁶⁵ Further, the three four-star generals--McNarney, Kenney, and Spaatz--and 11 of the 13 three-star generals--Emmons, Brett, Yount, Eaker, Giles, George, Cannon, Vandenberg, Stratemeyer, Twining, and Whitehead--graduated from ACTS.⁶⁶ Additionally, many more graduates served with distinction, but were either retired or killed prior to the end of the war. These officers all shared a common formative experience and later contributed to airpower's success in WWII.



⁶⁵ Finney, *History of ACTS*, 43.

⁶⁶ Finney, *History of ACTS*, 43.

Chapter 3

Development of Nuclear Doctrine

When a mass movement begins to attract people who are interested in their individual careers, it is a sign that it has passed its vigorous stage; that it is no longer engaged in molding a new world but in possessing and preserving the present.

- Eric Hoffer, *The True Believer*

In the final days of World War II, the US Army Air Force dropped two atomic bombs, one each on the Japanese cities of Hiroshima and Nagasaki. Because the atomic bomb was a wartime innovation, the US military did not develop an atomic doctrine prior to using the weapons. Instead, political and military leaders formed special committees to determine when, where, and how to use them. However, employment of the bombs nicknamed Fat Man and Little Boy relied upon the fully evolved wartime doctrine of strategic bombing. In the years following the end of WWII, strategic bombing doctrine evolved into nuclear doctrine, guiding the formation of SIOP-62. Similar to the ACTS theorists, Strategic Air Command (SAC) planners developed the operational plans to employ new weapons.

This chapter examines the post-WWII doctrine developments that led to SIOP-62. In a deliberate effort to examine similarities between development of AWPD-1 and SIOP-62, this chapter considers the people involved in forming the ideas, institutions, and doctrine of nuclear war.

Truman Learns of the Bomb

On April 24, 1945, just nine days after Harry S. Truman entered office as president following the death of Franklin D. Roosevelt, Secretary of War, Henry L. Stimson wrote to him requesting a meeting to discuss a “highly secret matter.”¹ The following day, Secretary Stimson and General Leslie Groves, head of the Manhattan Engineering District, the secret military organization created to develop the atomic bomb, briefed President Truman on the Manhattan Project. During the briefing, Secretary Stimson recommended forming a special advisory committee to explore the broader political and diplomatic issues surrounding use of the bomb both during and after the war. Truman accepted Stimson’s recommendation. The committee was known as the Interim Committee based on the assumption that Congress would eventually appoint, by law, a permanent body to supervise, regulate, and control the entire atomic field.²

In May 1945, Secretary Stimson became Chairman of the Interim Committee. Members of the committee included: Honorable Ralph A. Bard, Undersecretary of the Navy; Dr. Vannevar Bush, Director, Office of Scientific Research and Development; Honorable James F. Byrnes,

¹ Henry Stimson to Harry S. Truman, April 24, 1945, “The Decision to Drop the Atomic Bomb,” Confidential File, Truman Papers, Harry S. Truman Library and Museum, accessed December 14, 2014, http://www.trumanlibrary.org/whistlestop/study_collections/bomb/large/index.php.

² Log of the Interim Committee of the Manhattan Project, May 9, 1945, “The Decision to Drop the Atomic Bomb,” Subject File, Arneson Papers, Harry S. Truman Library and Museum, accessed December 14, 2014, http://www.trumanlibrary.org/whistlestop/study_collections/bomb/large/index.php.

Special Representative of the President; Honorable William A. Clayton, Assistant Secretary of State; Dr. Karl T. Compton, Chief, Office of Field Service, Office of Scientific Research and Development; Dr. James B. Conant, Chairman, National Defense Research Committee; and Mr. George L. Harrison, Special Consultant to the Secretary of War and Alternate Chairman of the Interim Committee.³ The Interim Committee's function was to advise President Truman on matters of policy, not strategy. However, in practice, Stimson used the Interim Committee to influence Truman to continue the plans and decisions already set in motion by Roosevelt.⁴ R. Gordon Arneson, the Army second lieutenant appointed as the committee's recorder, recalled, "Stimson didn't want advice. The operation was a train and no one wanted to stop it."⁵ Secretary Stimson was using the power of bureaucracy to shape the president's choices.

Secretary Stimson outlined the Interim Committee's charter as covering the whole field of atomic energy, in its political, military, and scientific aspects. Interestingly, there were no official military advisors assigned to the panel.⁶ While committee members suggested on two occasions, the May 14 and June 7 meetings, the organization of a

³ Log of the Interim Committee of the Manhattan Project, May 9, 1945, "The Decision to Drop the Atomic Bomb"

⁴ Samuel R. Williamson and Steven L. Rearden. *The Origins of U.S. Nuclear Strategy, 1945-1953* (New York: St. Martin's Press, 1993), 12.

⁵ John Newhouse, *War and Peace in the Nuclear Age* (New York: Knopf, 1989), 44.

⁶ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 12.

Military Panel with members drawn from high levels of the Army and Navy, other members, mainly Secretary Stimson himself, decided the committee would solicit input from those military members most directly concerned with the project, but not form a military panel.⁷

Meanwhile, General Groves began work on target selection for the atomic bomb. In close coordination with the Army Air Forces, Groves formed a target committee to advise on the selection of aim points.⁸ The target committee included Major General Thomas F. Farrell and Major J. H. Derry, both members of Groves' staff. In addition, the target committee contained three members from the Air Force Operations Analysis Group: Colonel William P. Fisher, Dr. Joyce C. Stearns, and David M. Dennison. Finally, three members from the Manhattan Project, Dr. John von Neumann, Dr. Robert R. Wilson, and Dr. William G. Penney, were assigned to the committee.⁹ The committee initially considered six target sites in Japan: Kyoto, Hiroshima, Yokohama, Kokura Arsenal, Niigata, and the Emperor's palace in Tokyo. However, after carefully considering the target locations, the committee recommended the following sites as the first four targets: Kyoto, Hiroshima, Niigata, and Kokura Arsenal.

⁷ Log of the Interim Committee of the Manhattan Project.

⁸ Vincent Jones, *Manhattan: The Army and the Atomic Bomb* (Washington, DC: Center of Military History, 1985), 528-530.

⁹ Leslie M. Groves, *Now It Can Be Told*, (New York: Da Capo Press, Inc., 1962), 268.

On June 1, 1945, the Interim Committee unanimously agreed to recommend that the president use the bomb against Japan. There was substantial debate regarding the circumstances of when and how to use the bomb. Part of this debate was whether America should wait to use the bomb in concert with a planned land invasion. This question struck the heart of previous ACTS debates regarding airpower's subordinate role to land forces or if airpower is capable of achieving independent effects. According to General Groves' account, "To any experienced soldier it was obvious that, once an advantage had been gained over an enemy as dangerous as Japan, no respite should be given." In addition, he argued that it would be "a serious mistake to postpone any feasible military operation in the expectation that the bomb would be ready as a substitute at some later date."¹⁰ Additionally, a group of scientists involved with the Manhattan Project, known as the Committee on Social and Political Implications, disagreed with the Interim Committee's recommendation to use the bomb without warning. They believed the new weapon was so powerful it would be unethical to introduce it to the world without at least a warning.¹¹ However, the Interim Committee and the Scientific Panel saw no utility in staging a demonstration or compromising the secrecy the Manhattan Project worked so hard to maintain. Therefore, the recommendation was to use the bomb

¹⁰ Groves, *Now It Can Be Told*, 264.

¹¹ Sherry, *The Rise of American Air Power*, 318.

immediately when available against a military target in Japan and to do so without warning,¹² just as the Japanese struck Pearl Harbor on December 7, 1941. The Japanese brought the United States into WWII by striking a major American naval base without warning. While the petition to President Truman signed by sixty-four Manhattan Project scientists argued for a strong warning of atomic capabilities prior to use and even a publicized detonation of the bomb to demonstrate its power, the Interim Committee's recommendation to President Truman would end the war with Japan just as it began: mercilessly.¹³

Stimson presented this recommendation to Truman hoping to get an immediate agreement on a decision to use the bomb, but Truman did not reveal his intentions. He neither officially accepted nor rejected the committee's recommendation. However, some of those involved, such as General Groves, took Truman's lack of restrictions as clearance to proceed. Groves, head of the target committee, later said, "As far as I was concerned, his decision was one of non-interference—basically, a decision not to upset the existing plans."¹⁴ The atomic program, to include target selection, continued uninterrupted.

¹² Notes of Meeting of the Interim Committee, June 1, 1945, "The Decision to Drop the Bomb," Miscellaneous Historical Documents Collection, Harry S. Truman Library and Museum, accessed December 14, 2014, http://www.trumanlibrary.org/whistlestop/study_collections/bomb/large/index.php.

¹³ Notes of Meeting of the Interim Committee, June 1, 1945, "The Decision to Drop the Bomb"

¹⁴ Groves, *Now It Can Be Told*, 265.

On July 24, 1945, General Groves transmitted a draft order authorizing release of the bomb over one of four target sites: Hiroshima, Kokura, Niigata, and Nagasaki to General George C. Marshall, Army Chief of Staff, for approval.¹⁵ The following day, July 26, 1945, President Truman, British Prime Minister Winston Churchill, and Chinese President Chiang Kai-shek issued the Potsdam Declaration calling for Japan's surrender. While the Declaration included a warning that the only alternative for Japan was prompt and utter destruction, it did not specifically mention the atomic bomb.¹⁶

On August 6, 1945, the United States dropped a fourteen-kiloton atomic bomb on Hiroshima. The detonation immediately killed 66,000 people.¹⁷ Three days later, the United States dropped a twenty-kiloton atomic bomb on Nagasaki, killing an estimated 39,000 people.¹⁸ Over the next year, 125,000 Japanese citizens died from the residual effects of the two atomic bombs.¹⁹ On August 14, under the threat of additional atomic bombings, the Japanese Emperor agreed to unconditional surrender and ended WWII.

¹⁵ Robert H. Ferrell, *Off the Record: The Private Papers of Harry S. Truman* (New York: Penguin Books, 1980), 56.

¹⁶ Wesley F. Craven and James L. Cate, *The Army Air Forces in World War II: The Pacific: Matterhorn to Nagasaki June 1944 to August 1945*, (Chicago, IL: The University of Chicago Press, 1953), 712.

¹⁷ Jones, *Manhattan*, 547.

¹⁸ Jones, *Manhattan*, 547.

¹⁹ United States Strategic Bombing Survey, *Summary Report (Pacific War)* (Washington, DC: Government Printing Office, 1946) 15-17, 22-25.

The bombs dropped on Japan represent the only wartime instance of the use of nuclear weapons for scholars and historians to study. The events that unfolded in 1945 from August 6, when the world first witnessed the devastation of the atomic bomb, until August 14, when Japan unconditionally surrendered, provide our only view of actual nuclear war. Albeit this was a one-sided exchange, it captured the strategic principles of escalation control, deterrence, and brinksmanship.

USAAF's Commitment to the Offense

Following World War II, the Army Air Force's belief in strategic bombing doctrine was absolute. In October 1945, General Arnold commissioned three USAAF leaders, Generals Carl A. Spaatz, Hoyt S. Vandenberg, and Lauris Norstad to study the effects of the atomic bomb. Known as the Spaatz Report, it assessed the future of the air arm in the "atomic age."²⁰ In December 1945, prior to his appointment as the first Chief of Staff of the Air Force, General Spaatz published an article in *Colliers* magazine titled "Air Power in the Atomic Age." The article revealed the findings of the Spaatz report and was a call for citizens to support the increasing material needs of the Army Air Force. Spaatz claimed, "In planning our national defense we need to become offense-minded. Our habits of strictly defensive thought must be weeded out."²¹ His article warned there would be no time for building up forces once

²⁰ Spaatz Report, November 1945, AFHRA, file 145.86-104, 1.

²¹ Carl A. Spaatz, "Air Power in the Atomic Age," *Collier's The National Weekly*, 8 December 1945, 12.

hostilities began because “war would be won or lost before any new plans could be made or new weapons built.”²² General Spaatz shared his assessment of the offensive versus defensive debate by observing “The startlingly clear military lesson of recent months is that the offense now has a crushing advantage.”²³ He concluded by stating “We have one real defense: a planned and ready air offensive.”²⁴ This declaration seemed a departure from previous doctrine, but it aligned with ACTS theories of the offensive striking power of strategic bombing harnessed to the atomic bomb.

However, the bomb’s destructive power made its initial use somewhat different from “industrial web” theory. On May 28, 1945 of the Targeting Committee, chaired by General Groves to select targets for the atomic bomb during WWII, decided to ignore “location of industrial areas as pin point targets” and instead drop the atomic bombs in the center of the selected cities.²⁵ General Groves explained in his memoirs that the enemy’s “will” was the overriding target, and military and industrial objectives were secondary targets.²⁶ The destructive power of the bomb and the overriding desire for psychological effects against the

²² Spaatz, “Air Power in the Atomic Age,” 11.

²³ Spaatz, “Air Power in the Atomic Age,” 83.

²⁴ Spaatz, “Air Power in the Atomic Age,” 84.

²⁵ Minutes of Third Target Committee Meeting – Washington, May 28, 1945, Top Secret Source: RG 77, MED Records, Top Secret Documents, File no. 5d (copy from microfilm), The National Security Archive Online:

<http://nsarchive.gwu.edu/NSAEBB/NSAEBB162/9.pdf> accessed 9 May 2016.

²⁶ Groves, *Now it Can Be Told*, 267.

Japanese population made accuracy or identification of “vital nodes” unimportant.²⁷

National Security Act of 1947

On July 26 1947, President Truman signed the National Security Act (NSA) reorganizing the national security and defense establishment. The act separated the Army Air Force from the Army and created the Air Force as a coequal military service with all services unified under a single Secretary of Defense, a presidentially appointed cabinet-level position. The NSA also established a key advisory body to the president known as the National Security Council (NSC). Members of the NSC included the Vice President, Secretary of Defense, Secretary of State, Director of Central Intelligence (CIA), and Chairman of the Joint Chiefs of Staff (CJCS).²⁸

The act also formalized the Joint Chiefs of Staff (JCS). Until 1947, the JCS met as an informal committee of service chiefs, but now they became a formal organization with a dedicated staff and direct access to the president. In addition, the CJCS became the senior military advisor to the president. However, this did not end the conflict between services because now it was the job of the Secretary of Defense to submit a single defense budget. In the past, the Department of the Navy and

²⁷ Sherry, *The Rise of American Airpower*, 319.

²⁸ Paul H. Nitze, *NSC 68: Forging the Strategy of Containment*. ed. Nelson S. Drew. (Washington, DC: National Defense University Press, 1996), 22.

Department of War, which encompassed the Army, operated on separate budgets secured by their respective civilian secretaries. This change might have simplified the Department of Defense's interaction with Congress and the president, but it complicated service relationships by creating an enormous military establishment.²⁹

The Independent Air Force

Signing of the NSA represented the realization of the dreams of airpower theorists such as Billy Mitchell, who died in 1936, and Hap Arnold, who retired in 1946. It also represented the official closure of the "mass movement" to realize the doctrine of strategic bombardment.³⁰

Eric Hoffer wrote about the motivations of people that rally toward mass causes. He noted that when a movement no longer engages in molding a new world but in possessing and preserving the present, it ceases to be a movement and becomes an enterprise.³¹ Creation of an independent Air Force meant strategic bombardment doctrine no longer represented a mass movement, but an institutionalized behavior in the new service. Justified by the United States Strategic Bombing Survey (USSBS) as being decisive during WWII and legitimized strategic bombing by the NSA, strategic bombardment became normal operating procedure for the US Air Force. Strategic bombing was, therefore, the natural choice for

²⁹ Richard Smoke, *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War* (New York: McGraw-Hill, Inc., 1993), 43-46.

³⁰ Hoffer, *The True Believer*, 147.

³¹ Hoffer, *The True Believer*, 13.

nuclear doctrine. If there were other viable options for delivery of atomic weapons, the Air Force, reliant on the doctrine of strategic bombing, did not pursue them.

At the close of WWII, General Spaatz, later appointed as the first chief of staff of the new United States Air Force, publicly declared that “the ability to win future wars depended on America’s ability to strike immediate blows against his [the enemy nation’s] means of civilization and military support, his industrial and economic areas, to make his continuance of the struggle pointless and bring a quick surrender.”³² He further identified the perfect weapon for this type of warfare as having “more range, increased explosive power, greater accuracy.” He concluded that the best way to ensure victory in war was to develop a “national psychology of offense.”³³ A graduate of ACTS, Spaatz touted the very elements of airpower used as the basis for AWPD-1: a) modern states’ dependence on an interwoven industrial base, b) suitability of precision bombing, and c) ability of air forces to penetrate enemy defenses and strike interior targets using speed, initiative, and altitude.³⁴ The mass movement was now a formal enterprise led by those who revolutionized strategic bombardment doctrine.

³² US Air Force, *Official Biography of General Carl A. Spaatz*, accessed 15 April 2016 online at: www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/105528/general-carl-a-spaatz.aspx

³³ Spaatz, “Air Power in the Atomic Age,” 12.

³⁴ Hansell, *The Air Plan That Defeated Hitler*, 40.

Strategic Air Command

In March 1946, General Spaatz announced a reorganization of the Army Air Force into three combat organizations—Tactical Air Command (TAC) led by Lt Gen Elwood “Pete” Quesada; Air Defense Command (ADC) led by Lt Gen George E. Stratemeyer; and Strategic Air Command (SAC), led by Gen George C. Kenney.³⁵ SAC was the dominant of the three combat commands, with an authorized personnel strength of 84,231; TAC had only 26,000 people and ADC a mere 7,000.³⁶

Established at Bolling Field in Washington, DC, SAC faced many challenges as a new organization. The post-WWII drawdown of military forces reduced each organization by as much as 90 percent. As the largest AAF command, SAC nevertheless experienced a loss of personnel and experience. Due to drastic shortage of qualified mechanics, SAC could not keep radar bombardment and navigational aids in operating condition and by the end of 1946, in-commission rates for SAC aircraft averaged only 42 percent.³⁷ In 1947, the newly formed Atomic Energy Commission exacerbated SAC’s issues due to the strict classification and controls over the atomic weapons. The AEC exercised a monopoly over all things atomic and carefully guarded all information and access. The military division of the AEC was the Armed Forces Special Weapons

³⁵ W. H. Lawrence, “Regrouping of Army Airmen in 3 Commands Set by Spaatz,” *New York Times*, 3 March 1946, 1, 15.

³⁶ Meilinger, *Bomber*, 79.

³⁷ Meilinger, *Bomber*, 80.

Project (AFSWP). Headed by General Groves, the AFSWP controlled the facilities that manufactured and stored the bombs. Groves openly identified that the AEC's position "should be a watchdog for the armed forces."³⁸ In turn, Groves strictly controlled access to the weapons for training on their handling, storage and use. Therefore, not only was SAC plagued by personnel reductions and an overwhelming loss of trained technicians, but the command's ability to train the remaining personnel also suffered. Finally, in August 1948, the Air Force gained control over the AFSWP in order to execute the service's emergency war plans.³⁹ The shift of the AFSWP eased some difficulties for SAC; however, the command faced greater changes in the coming months.

General Curtis LeMay took command of SAC in October 1948 and remained in that position for nine years. The legendary warrior and architect of the Berlin Airlift became the face of the Air Force's nuclear bomber force. Upon taking command of SAC, General Curtis LeMay determined the organization suffered from a lack of proficiency resulting from loose standards. LeMay set out to rebuild SAC, which suffered operational neglect since its formation in 1946, into a "cocked weapon."⁴⁰ He immediately applied organizational controls of strict discipline and unquestioned obedience to doctrine and procedures to remedy the

³⁸ Meilinger, *Bomber*, 82.

³⁹ Meilinger, *Bomber*, 82.

⁴⁰ David Allen Rosenberg, "U.S. Nuclear War Planning, 1945-1960," In *Strategic Nuclear Targeting*, edited by Desmond Ball and Jeffrey Richelson 35-56. (Ithaca, NY: Cornell University Press, 1986), 39.

problem. However, the controls also stifled the critical thinking and healthy debate needed to ensure planning assumptions remain valid.

Over time, LeMay insulated SAC from all other commands. He demanded strict adherence to standards and undying loyalty. Officers that did not measure up to standards were fired on the spot, while top performers were given spot promotions. Throughout an officer's career, LeMay pushed out those that did not live by the SAC tradition and insulated those that did. It was commonplace to find senior officers that never had an assignment outside of SAC. General LeMay and later, General Power did not allow high performers to attend professional schools outside of SAC.⁴¹ LeMay prevented officers he felt should be SAC leaders from attending Air University, the professional airpower school that drew its heritage directly from the Air Corps Tactical School. LeMay carried this group of insulate officers straight to the top with him. By 1960 when LeMay was Chief of Staff, SAC bomber pilots comprised 77% of General Officers in the Air Force.⁴²

At the time, the Air Force still relied on war plans using a combination of conventional and atomic weapons. However, LeMay set about to maximize SAC's capabilities to wage atomic war.⁴³ He convinced the Air Force to cancel its plans to procure the B-54, a

⁴¹ Mike Worden, *Rise of the Fighter Generals: the Problem of Air Force Leadership 1945-1982*, (Maxwell Air Force Base, AL: Air University Press, 1998), 142.

⁴² Jeffrey J. Smith, *Tomorrow's Air Force: Tracing the Past, Shaping the Future* (Bloomington, IN: Indiana University Press, 2014), 95.

⁴³ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 103.

medium-range bomber, in place of additional B-36 intercontinental nuclear-capable bombers. This shift in procurement added to the nation's existing reliance on nuclear forces and further reduced the buildup of more expensive conventional capabilities.⁴⁴ Frank Pace, Director of the Bureau of the Budget, warned Truman that the change could create a situation which would not permit the president any alternative to the use of nuclear weapons in an emergency. Truman later asked his Air Force aide, Brigadier General R. B. Landry, if the United States was putting "all its eggs in in one basket" but Landry assured him the American strategy was a balanced one.⁴⁵

NSC-30

By 1948, Truman had not yet provided strategic guidance regarding use of atomic weapons. In an effort to establish planning guidelines, the Air Force drafted a memorandum for the NSC based on the results from a study on atomic warfare. The memorandum, known as NSC-30, "United States Policy on Atomic Weapons," outlined national policy regarding how to plan and prepare for atomic warfare. The memorandum played to Truman's style by promoting a policy of deliberate ambiguity.⁴⁶ Vague references in NSC-30 directed that any final decision on use of atomic weapons rested with the president and no

⁴⁴ Rosenberg, "U.S. Nuclear War Planning, 1945-1960," 39.

⁴⁵ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 103.

⁴⁶ Rosenberg, "U.S. Nuclear War Planning, 1945-1960," 38.

attempt should be made to gain a determination on when, in the future, such weapons would be used. It included two key paragraphs:

It is recognized that, in the event of hostilities, the National Military Establishment must be ready to utilize promptly and effectively all appropriate means available, including atomic weapons, in the interest of national security and must therefore plan accordingly.

The decision as to the employment of atomic weapons in the event of war is to be made by the Chief Executive when he considers such decisions to be required.⁴⁷

Truman received NSC-30 without either concurring or dissenting.

However, this lack of direction provided an endorsement for the memorandum and it therefore became policy.⁴⁸

One reason NSC-30 is a key historical document is because it directed presidential authorization for the release of nuclear weapons. On the surface, it would appear to provide Truman with ultimate authority over use of the bomb. This fit his views that the bomb was an instrument of terror “used to wipe out women, children and unarmed people, and not for military use”⁴⁹ However, the mandate that atomic weapons be included in war plans placed decisions regarding probable circumstances of use and nature of targets in the hands of his military advisors.⁵⁰ Therefore, NSC-30 granted the power to military planners to

⁴⁷ National Security Council, “NSC-30, United States Policy on Atomic Warfare, September 10, 1948,” *Foreign Relations of the United States 1948*, vol. 1 (Washington, DC: Government Printing Office, 1975), 625-628.

⁴⁸ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 91.

⁴⁹ Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York: St Martin’s Press, 1982), 49.

⁵⁰ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 91.

determine employment options. As more weapons became available, the recurring military planning cycle produced increasingly destructive nuclear options. These options grew more lethal and complex, serving to limit the flexibility of the options available. This planning process soon became the mechanism for limiting the president's choices.

The second noteworthy precedent of NSC-30 is the military's requirement to plan for a nuclear response to support all war plans. The military interpreted NSC-30 as granting exclusive control over the writing of war plans without input from politicians. Prior to this mandate, the US atomic plan consisted of broad national strategy and unit-level tactics. NSC-30 introduced the operational level of war to the nuclear planning process. This meant that every regional or combatant commander had to include objectives for the employment of the atomic bomb as part of every war plan. This included plans to assist other countries, marking the formalization of America's mission, under NSC-30, to assure our allies using a global nuclear umbrella.

NSC-68

In January of 1950, shortly after the Soviets tested their first atomic weapon, President Truman directed Secretary of State Dean Acheson and newly appointed Secretary of Defense Louis Johnson to "undertake a reexamination of our objectives in peace and war ... in light of the probable fission bomb capability and possible thermonuclear bomb

capability of the Soviet Union.”⁵¹ The result became the seminal strategic document of the Cold War era: NSC-68.⁵²

NSC-68 did not mark a substantial departure from existing United States policy; however, it did provide rationalization for the strategy known as Containment aimed at stopping Soviet expansionism. The report drew from many existing studies and established theories. The memorandum served as a warning to the seriousness of the Soviet threat. It called for an immediate increase in military spending to provide additional wartime preparedness and continued US reliance on nuclear weapons until build-up of a sufficient conventional force. The memorandum rejected preventative war to stop the Soviets before they built up enough atomic weapons to threaten the United States. However, NSC-68 did allow for preemptive strikes if an attack on America was imminent.⁵³

President Truman did not accept NSC-68 right away, but referred it to the NSC for consideration. He requested additional information on the programs discussed in the report and their cost. However, a surprise attack by North Korea on South Korea persuaded President Truman to take the conclusions of NSC-68 seriously.

⁵¹ Nitze, *NSC-68*, 33.

⁵² Nitze, *NSC-68*, 1.

⁵³ Freedman, *The Evolution of Nuclear Strategy*, 66-67.

Korean War

On June 25, 1950, North Korean forces invaded South Korea. This began a war that would last just over three years pitting communist forces against a United Nations (UN) coalition. The Korean War came at a time when national strategic policy recognized no distinct difference between conventional and nuclear war. Established policy and doctrine presented nuclear war as a natural escalation of conventional war. However, it was only a matter of time before President Truman's willingness to wield the bomb politically came face to face with his disdain for use of nuclear weapons operationally.⁵⁴

Three major outcomes of the Korean War influenced American nuclear policy. First, realization of the Soviet threat and adoption of NSC-68 drove a significant and essentially permanent increase to the defense budget. Following North Korea's invasion, Truman took heed of NSC-68's warning of the threat of Soviet aggression. He requested multiple increases to the fiscal year 1950 defense budget from Congress. Changes in defense spending eventually increased the fiscal Year 1951 budget from \$13 billion to \$48 billion.⁵⁵ Second, NATO became formally militarized. Following the start of the war, NATO formed a unified military command encompassing various national armies and named General Dwight D. Eisenhower as the Supreme Allied Commander in

⁵⁴ Freedman, *The Evolution of Nuclear Strategy*, 68.

⁵⁵ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 139.

Europe. In the years to come, NATO came to rely upon United States atomic weapons as the backbone of extended deterrence and European stability.⁵⁶ Third, Korea proved it was possible for nuclear-armed countries to engage in limited wars.

In the early stages of the war, Truman thought use of atomic weapons might be necessary. In a news conference on November 30, 1950, Truman commented that use of atomic weapons had been under consideration for some time. In addition, he noted in his diary entry of December 9, 1950 that, "it looks like World War III is here."⁵⁷ However, upon hearing this, British Prime Minister Clement Attlee flew to Washington and pled for the US to exercise nuclear restraint.⁵⁸ Perhaps the most significant realization for the American military to come of this was the lack of operational utility of nuclear weapons in limited warfare.⁵⁹

While nuclear weapons were not proving useful in limited war, the JCS saw the need for nuclear war planning guidance in preparation for war with the other nuclear capable country and the primary foe in the rapidly unfolding Cold War, the Soviet Union. The JCS approved three objectives for war planning:

⁵⁶ David N. Schwartz, *NATO's Nuclear Dilemmas* (Washington, DC: The Brookings Institution, 1983), 32.

⁵⁷ Ferrell, *Off the Record*, 204.

⁵⁸ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 143.

⁵⁹ Williamson and Rearden, *The Origins of U.S. Nuclear Strategy*, 189.

1. Bravo: The blunting of the Soviet capability to deliver an atomic offensive against the United States and its allies.

2. Romeo: The retardation of Soviet advances into Western Eurasia.

3. Delta: The disruption of the vital elements of the Soviet war-making capacity.⁶⁰

These categories framed future strategy discussions as well. For example, as Soviet nuclear capability increased, SAC focused more on the BRAVO category of targeting to blunt the Soviet capabilities.⁶¹

However, unwilling to neglect any of the three target categories, SAC faced a growing target list and sought to increase the number of weapons to cover them all.

Eisenhower takes office

The year Dwight D. Eisenhower entered the presidency, the American nuclear arsenal grew by fifty percent to 1,169 bombs, while the Soviet arsenal increased by almost 150 percent to 120 bombs.⁶²

Eisenhower needed a nuclear strategy to match the growing arms race. By the end of his presidency, Eisenhower left an enduring standard for operational nuclear war planning.

⁶⁰ Sagan, *Moving Targets*, 20.

⁶¹ Sagan, *Moving Targets*, 20.

⁶² The Data Team, "Interactive Daily Chart: The World's Nuclear Weapons, The Nuclear Age," *The Economist*, March 11, 2015, accessed May 12, 2015, <http://www.economist.com/blogs/graphicdetail/2015/03/interactive-daily-chart>.

Upon entering office, President Eisenhower focused immediately on ending the Korean War. The war, now locked in a stalemate after many hard fought battles, was defined by a static frontline near the starting point of the thirty-eighth parallel. Early attempts to drive the communists completely out of Korea caused the Allies to advance too far north and close to the Chinese-Korean border. The newly installed communist Chinese government retaliated with a massive offensive to push UN forces off the peninsula. The Chinese regarded the UN presence as intervention in a civil war and a threat to their new regime. The Sino-Soviet treaty further complicated the issue, raising the possibility of Soviet intervention in support of China. In developing his strategy, Eisenhower announced to the NSC that the atomic bomb was, “simply another weapon in our arsenal.”⁶³ However, the president was not interested in escalating the Korean War into a general war with China or the Soviet Union.

According to Joseph Stalin, the Korean War provided an education for China and Korea (and perhaps most importantly, the USSR) regarding American war methods and weaknesses. In July 1951, Stalin wrote to Mao, “The Korean War should not be sped up.”⁶⁴ However, Stalin’s death in March 1953 signaled an end to Soviet support of the conflict and

⁶³ Minutes of Meeting, 6 May 1953, Papers of Dwight D. Eisenhower as President, 1953-1961, Ann Whitman File, National Security Council, Box 4, 143rd Meeting, Dwight D. Eisenhower Presidential Library and Museum, Abilene, KS, 11.

⁶⁴ John L. Gaddis, *We Now Know: Rethinking Cold War History*, (New York: Oxford University Press, 2007), 108.

contributed to the Chinese desire to end the war.⁶⁵ Just weeks after Stalin's death, the Soviet Council of Ministers wrote to both the Chinese and Korean leaders that the Soviets were ready to see the conflict end.⁶⁶ Capitalizing on a weakening Sino-Soviet alliance, Eisenhower sent a private message to the Communist Chinese leadership in May 1953 threatening nuclear strikes if negotiations to end the conflict in Korea did not reach an agreement soon.⁶⁷

On July 27, 1953, the Korean War ended in an armistice agreement between North and South Korea. The settlement called for a cease-fire and established a demilitarized zone near the thirty-eighth parallel, essentially restoring the divided peninsula to its pre-war status.

The Korean War was the first American limited war following WWII. Without the threat of nuclear war, the Korean War would almost certainly have escalated to general war between the US, the Soviet Union and China. Soviet Premier Nikita Khrushchev later spoke of Stalin, "He was afraid of war. He knew that we were weaker than the United States. We had only a handful of nuclear weapons, while America had a large arsenal of nuclear arms."⁶⁸ Nevertheless, USAF leaders such as LeMay

⁶⁵ Robert A. Pape, *Bombing To Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996), 167.

⁶⁶ Gaddis, *We Now Know*, 108-109.

⁶⁷ Smoke, *National Security and the Nuclear Dilemma*, 72.

⁶⁸ Jerold L. Schecter and Vyatcheslav V. Luchkov, trans. and eds., *Khrushchev Remembers: The Glasnost Tapes* (Boston: Little, Brown, 1990), 100-101.

believed the threat of nuclear war kept both the United States and USSR from escalating a war they were fighting for limited objectives.⁶⁹

NSC-162/2

NSC-162/2 would serve as President Eisenhower's basic nuclear strategy throughout his entire administration. The policy memorandum resulted from various studies and policy reviews, but most prominently from a series of war games led by Eisenhower called Project Solarium.⁷⁰ The Solarium report formed the basis for NSC-162/2. In December 1953, as a response to the Solarium report, Eisenhower initiated a three-year defense program with the following priorities: offensive striking power, tactical nuclear weapons, and defense against nuclear attack.⁷¹ NSC-162/2 directly influenced nuclear doctrine by identifying the overarching strategy for employment of nuclear weapons and outlining general requirements for national security. The document stated that the United States needs to maintain "a strong military posture, with emphasis on the capability of inflicting massive retaliatory damage by offensive striking power,"⁷² and that the "United States will consider

⁶⁹ Conrad Crane, *American Airpower Strategy in Korea, 1950-1953* (Lawrence, KS: University Press of Kansas, 2000), 176.

⁷⁰ White House Office, National Security Council Staff: Papers 1948-1961, Executive Secretary's Subject File Series, Box no: 15, Folder-Project Solarium (4), Dwight D. Eisenhower Presidential Library and Museum, Abilene, KS.

⁷¹ David Allen Rosenberg, "Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960." In *Strategy and Nuclear Deterrence*, edited by Steven E. Miller, 113-182. (Princeton, NJ: Princeton University Press, 1984), 138-141.

⁷² US Department of State, Foreign Relations of the United States (FRUS), 1952-1954, National Security Affairs, vol II, part 1, Report to the National Security Council by the Executive Secretary, NSC-162/2, 591. Online at: https://history.state.gov/historicaldocuments/frus1952-54v02p1/pg_577 accessed 9 May 2016.

nuclear weapons to be as available for use as other munitions."⁷³ The strategy of NSC-162/2, known as Massive Retaliation, became the national security strategy for the remainder of Eisenhower's presidency. However, even with the ability to employ Massive Retaliation, Eisenhower was concerned about Soviet power and sought advice on the Soviet nuclear threat from scientists at the RAND Corporation.

Killian Report

In March 1954, President Eisenhower was concerned about growing Soviet capabilities, including the first Soviet test of a thermonuclear bomb on August 12, 1953.⁷⁴ Eisenhower asked the Science Advisory Committee to investigate the possibility of a Soviet thermonuclear surprise attack. Dr. James R. Killian Jr., the President of the Massachusetts Institute of Technology, led the Killian Committee, officially known as the Technological Capabilities Panel. Dr. Killian directed a forty-two member committee in studying the United States' vulnerability to surprise nuclear attack. In February 1955, the committee delivered a two-volume report called, "Meeting the Threat of Surprise Attack."⁷⁵

⁷³ FRUS 1952–1954 vol II, part 1, NSC-162/2, 593.

⁷⁴ Charles R. Loeber, *Building the Bombs: A History of the Nuclear Weapons Complex*. 2nd ed. (Albuquerque, NM: Sandia National Laboratories, 2005), 114.

⁷⁵ Capabilities Panel of the Science Advisory Committee, Office of Defense Mobilization, February 14, 1955, Technological Capabilities Panel of the S.A.C., Report to the President, February 14, 1955 Folder, Subject Series, Alphabetical Subseries, Box 11, WHO-SS, Dwight D. Eisenhower Presidential Library and Museum, Abilene, KS, vol. 1, 10-22, 31-46; vol. 2, 50, 71, 111.

In 1955, the United States possessed over 2,400 nuclear weapons while intelligence estimates put the USSR stockpile at 200.⁷⁶ Nevertheless, the Killian Committee saw a looming threat. The committee's report warned of the threat posed by Soviet nuclear parity and estimated 1960 as the "year of danger."⁷⁷ The committee asserted that as early as 1958, both the United States and the Soviet Union could achieve mutual destruction of each other. The committee saw this looming parity as creating a stalemate, thereby removing the United States' nuclear advantage and making Soviet conventional superiority relevant again. The report stated, "We see no certainty, however, that the condition of a stalemate can be changed through science and technology;" however, "technological innovations could be powerful instruments for creating strength," and provide "a deterrent to war."⁷⁸ The committee recommended developing a strategic early warning radar, defending SAC bases using anti-aircraft artillery, and stressed the need for strategic intelligence capable of locating and identifying Soviet nuclear capabilities. In addition, the report advocated for the accelerated development of intermediate range ballistic missiles (IRBM) and

⁷⁶ The Data Team, "Interactive Daily Chart: The World's Nuclear Weapons, The Nuclear Age." *The Economist*, March 11, 2015. Accessed January 12, 2016.

<http://www.economist.com/blogs/graphicdetail/2015/03/interactive-daily-chart>

⁷⁷ Fred Kaplan, *The Wizards of Armageddon* (Stanford, CA: Stanford University Press, 1983), 131.

⁷⁸ Capabilities Panel of the Science Advisory Committee, Office of Defense Mobilization, February 14, 1955, Technological Capabilities Panel of the S.A.C., Report to the President, February 14, 1955 Folder, Subject Series, Alphabetical Subseries, Box 11, WHO-SS, Dwight D. Eisenhower Presidential Library and Museum, Abilene, KS, vol. 1, 10-22, 31-46; vol. 2, 50, 71, 111.

intercontinental ballistic missiles (ICBM) as well as the Navy Polaris submarine-launched ballistic missiles (SLBM) program. This recommendation formed what would become the triad of nuclear forces.⁷⁹

The report stressed the survival relationship between offensive and defensive forces. "Our striking forces must blunt the attack at its source: defense must protect our retaliatory power as well as our people and our cities. Together they provide overall strength and a substantial deterrent to war."⁸⁰ While the report gave the highest priority to improving intelligence, tactical warning capabilities, and air defenses, it also urged the need for dissemination of nuclear weapons to locations of both offensive and defensive forces. The report urged the need to disperse SAC forces as an effort to decrease vulnerability of a relatively limited number of bases from a surprise bombing attack that might destroy the aircraft before they could get off the ground. It also noted the need to have nuclear weapons on board aircraft in order to be able to launch an immediate counterstrike; therefore co-location of bombers and weapons became important. In addition, the ability of nuclear-tipped air defense missiles to respond quickly in defense of a Soviet attack was equally

⁷⁹ Fred Kaplan, *The Wizards of Armageddon* (Stanford, CA: Stanford University Press, 1983), 131.

⁸⁰ Capabilities Panel of the Science Advisory Committee, Office of Defense Mobilization, February 14, 1955, Technological Capabilities Panel of the S.A.C., Report to the President, February 14, 1955, vol. 1, 10-22, 31-46; vol. 2, 50, 71, 111.

important. The committee's most controversial recommendation was that Eisenhower give "advance authority for the instant use of the atomic warheads wherever needed over the land areas of the United States and Canada."⁸¹

President Eisenhower received the report and expressed great confidence in both the committee members and their findings.⁸² He implemented most of the committee's recommendations including, in April 1956, advanced authorization to Air Defense Command to use nuclear-tipped Nike-Hercules surface-to-air missiles to defend the United States against Soviet bombers in the event of surprise attack.⁸³ However, Eisenhower also granted this advanced authorization to offensive bomber units. NSC-5402 granted the President the right to authorize the use of nuclear weapons in advance of any conflict. President Eisenhower used this authority to grant General LeMay authorization to conduct retaliatory strikes "if time or circumstances would not permit a decision by the president."⁸⁴ The military began to refer to this advanced authorization as predelegation.⁸⁵ At a time when

⁸¹ Capabilities Panel of the Science Advisory Committee, Office of Defense Mobilization, February 14, 1955, Technological Capabilities Panel of the S.A.C., Report to the President, February 14, 1955, vol. 1, 10-22, 31-46; vol. 2, 50, 71, 111.

⁸² Desmond Ball and Jeffrey Richelson, eds. *Strategic Nuclear Targeting* (Ithaca, NY: Cornell University Press, 1986), 46.

⁸³ NSC-5602/1 quoted in Rosenberg; "AEC-Policy on Use of Atomic Weapons," briefing Notes Subseries, NSC Series, Box 1, Dwight D. Eisenhower Presidential Library and Museum, Abilene, KS.

⁸⁴ Sagan, *Moving Targets*, 142.

⁸⁵ Peter Douglas Feaver, *Guarding the Guardians: Civilian Control of Nuclear Weapons in the United States*, (Ithaca, NY: Cornell University Press, 1992), 51.

the United States outnumbered the Soviet Union in nuclear weapons by twelve to one, fear of a still-distant looming parity seemed to drive national defense priorities.

Fear of Soviet capability began to increase in 1955, as a result of a USSR aerial demonstration in Moscow. Ten new Soviet long-range bombers known as the Mya-4 Bison flew overhead in formation. Once the ten were out of sight, they circled around, joining eight more Bison and overflowed the crowd a second time. This gave the appearance of twenty-eight aircraft. News of these twenty-eight, actually only eighteen, new long-range Soviet bombers spread to the United States. The lack of credible intelligence caused speculation over reports of the status of the Bison bomber.⁸⁶ Therefore, based on an estimate of Soviet production capacity, United States Air Force analysts believed that Moscow would out-produce the United States in bombers because the analysts assumed Soviets would produce at their maximum possible capability.⁸⁷ Fear of an imminent bomber gap began to circulate. A National Intelligence Estimate written in May 1955 erroneously estimated the Soviets were capable of striking the United States with 1,300 medium and long-range bomber aircraft.

Further, the November 1955 Soviet test of a 1.6 megaton nuclear weapon confirmed their thermonuclear capability. While there were

⁸⁶ Timothy J. Botti, *Ace in the Hole: Why the United States Did Not Use Nuclear Weapons in the Cold War, 1945 to 1965* (Westport, CT: Greenwood Press, 1996), 82.

⁸⁷ Rosenberg, "Origins of Overkill," 149-150.

many skeptics of the bomber gap theory, including Eisenhower himself, in May 1956, General Curtis LeMay testified before a Senate subcommittee that the Soviets were producing bombers faster than the United States.⁸⁸ In reality, there was never a bomber gap because the United States possessed both superior aircraft and greater numbers of them than the Soviet Union.⁸⁹ However, the idea of a bomber gap made the USSR appear menacing and drove the United States to increase production of its newest long-range bomber, the B-52 Stratofortress, capable of delivering six nuclear weapons. Even though Eisenhower knew the estimates of a bomber gap were false, he turned again to the experts at RAND for a strategic estimate.

Gaither Report

In the summer of 1957, Nelson Rockefeller, chair of Eisenhower's Psychological Warfare Panel, urged the president to commission a study on active and passive measures for civil defense in the event a nuclear attack. Eisenhower asked H. Rowan Gaither, chairman of the board at both RAND and the Ford Foundation to direct the study. Gaither agreed and formed a team of over seventy economists, scientists, weapon experts, and government officials. Among the team members were Dr. E. O. Lawrence of Lawrence Livermore National Laboratory, former Defense Secretary Robert Lovett, former Chief of Naval Operations Admiral Robert

⁸⁸ Andrew J. Bacevich, *Washington Rules: America's Path to Permanent War*, (New York: Metropolitan Books, 2011), 50.

⁸⁹ Botti, *Ace in the Hole*, 88-89.

Carney, and USAF General Jimmy Doolittle.⁹⁰ Officially, the committee was the Security Resources Panel to the Science Advisory Committee of the Office of Defense Mobilization, but it was commonly known as the Gaither Committee. Several of the members also served on the Killian Panel and the study soon expanded into a general study of United States' vulnerabilities during nuclear attack, including SAC forces.

The Gaither Report, entitled "Deterrence and Survival in the Nuclear Age," validated the earlier Killian Report's prediction of the imminent increase in Soviet nuclear forces. The Gaither Report, however, moved the "year of danger" to the mid-1960s as the point of anticipated nuclear parity that would leave both United States and USSR bomber bases vulnerable to attack from each other. However, it also noted that early warning systems and anti-missile systems should be operational by then, providing increased defenses.⁹¹ Both reports focused on advances in technology and recommended active and passive defensive measures.

However, just one month before the Gaither Report was to be presented to the president, the Soviet Union launched the first satellite into space, Sputnik. This act sparked fear in the American people because it proved the Soviet capability to launch a payload by missile against the North American continent. If the Soviets can launch a

⁹⁰ Kaplan, *The Wizards of Armageddon*, 125-129.

⁹¹ Freedman, *The Evolution of Nuclear Strategy*, 151.

satellite over the United States, many feared, they could launch a nuclear bomb at the United States. On December 20, 1957, *The Washington Post* reported on the Gaither Report stating, “The still top secret report portrays a United States in the gravest danger in its history.”⁹² The American people now openly discussed the prospect of a missile gap. However, the Soviets did not have the advantage in missile capability and Eisenhower knew it, but the classification of Eisenhower’s intelligence source prevented him from revealing the truth. Instead, other government agencies, such as the Air Force, leveraged this misperception to increase their budget share and reinforce their bureaucratic need of self-preservation.

The Air Force was also using advances in intelligence to build a growing target list. The increases in surveillance capabilities, as recommended by the Killian Report, provided locations of targets for SAC to strike during nuclear war. This increasing target list meant SAC required more weapons to strike the targets. Hence, increasing numbers of weapons required more delivery aircraft. The other services began to call this process bootstrapping. However, specifics on SAC’s war plans proved difficult to verify.

In the early 1950s, SAC’s nuclear targeting team consisted of a small group of officers at Offutt Air Force Base in Omaha, Nebraska that

⁹² David L. Snead, *The Gaither Committee, Eisenhower, and the Cold War* (Columbus: Ohio State University Press, 1999), 139.

existed in autonomy. General LeMay boasted that, while serving as the Commander-in-Chief at SAC, he never discussed what SAC would do with the nuclear forces it had with any “topside” brass, military or civilian. In fact, from 1951 to 1955, LeMay did not submit his war plans to the JCS, as required.⁹³ LeMay was building a reputation of autonomy for SAC. However, this reputation also caught the attention of the Gaither Committee.

During the Gaither Committee’s investigation of US nuclear capabilities on behalf of President Eisenhower, members of the committee Robert Sprague, Bill Foster, Jerry Wiesner, and Bill Webster visited SAC headquarters to meet with General LeMay. On September 16, 1957, while visiting North American Aerospace Defense Command headquarters in Colorado Springs with General LeMay, the committee requested an alert exercise demonstration to see if the SAC airplanes could takeoff in the proper airborne alert window. Not a single aircraft was able to takeoff from the ground in the six hours of simulated strategic warning of an imminent Soviet attack. General LeMay was not fazed by the results.⁹⁴ LeMay maintained that SAC was “second to none.”⁹⁵ He declared, “If I see that the Russians are amassing their planes for an attack I’m going to knock the shit out of them before they

⁹³ Ball, *Adelphi Paper #185: Targeting for Strategic Deterrence*, 39.

⁹⁴ Kaplan, *The Wizards of Armageddon*, 132.

⁹⁵ Kaplan, *The Wizards of Armageddon*, 134.

take off the ground.”⁹⁶ Sprague interrupted, “But general, that’s not national policy.”⁹⁷ LeMay replied, “I don’t care, it’s my policy. That’s what I’m going to do.”⁹⁸ It appeared to the stunned Sprague that LeMay was prepared to send the bombers off on a pre-emptive strike against the Soviet Union solely on his own authority.⁹⁹ LeMay, who was the Vice Chief of Staff of the Air Force at this time, apparently had decided his predelegation for retaliatory strikes extended to pre-emptive strikes as well. This story illustrates the absolute faith LeMay and the Air Force placed in a strong offensive military capability. Similar to the widespread use of offensive doctrine prior to WWI, known as the “cult of the offensive,” LeMay had the Air Force poised and ready to strike. Admittedly, he did not recognize the need to await presidential orders before launching a massive nuclear strike. While such a strong offensive posture is credited as a major contributor to the quick escalation of hostilities in WWI, the addition of ACTS strategic bombing doctrine and devastatingly powerful nuclear weapons brought unprecedented speed and lethality to LeMay’s offense.¹⁰⁰

The Gaither Report drove many changes in nuclear doctrine and policy. First, the report recommended aerial defense missiles around SAC bases and hardened concrete shelters to protect aircraft from a

⁹⁶ Kaplan, *The Wizards of Armageddon*, 132.

⁹⁷ Kaplan, *The Wizards of Armageddon*, 132.

⁹⁸ Kaplan, *The Wizards of Armageddon*, 132.

⁹⁹ Feaver, *Guarding the Guardians*, 47.

¹⁰⁰ Posen, *The Sources of Military Doctrine*, 14-15.

nuclear strike.¹⁰¹ In response, the Secretary of Defense ordered deployment of Nike-Hercules nuclear surface-to-air missiles around SAC bases. The aircraft shelters, viewed as impractical and overly passive in nature, were rejected by the Air Force and not constructed. Second, the report recommended a decrease in the response time for SAC aircraft to become airborne following a tactical warning.¹⁰² LeMay pursued a massive undertaking to increase the number of aircrews, streamline maintenance schedules, and reconstruct taxiways to decrease takeoff intervals. In addition, LeMay instituted continuous airborne alert and “fifteen minute ground alert” for one third of SAC forces.¹⁰³ Third, the Gaither Report recommended an increase in production of offensive missile systems.¹⁰⁴ In response, the Department of Defense also doubled production of IRBMs (Thor and Jupiter missiles) and ICBMs (Atlas and Titan missiles) and tripled the production of SLBMs (Polaris missiles).

The concepts of flexibility, survivability, and responsiveness of strategic nuclear forces are an important legacy of the recommendations of the Gaither Report. This was another call for what would later become the strategic nuclear triad—three legs of the nuclear force with each having separate capabilities that complement the total force. The production of the delivery systems was already underway, but the

¹⁰¹ Snead, *The Gaither Committee, Eisenhower, and the Cold War*, 139.

¹⁰² Snead, *The Gaither Committee, Eisenhower, and the Cold War*, 139.

¹⁰³ Rosenberg, “Origins of Overkill,” 156.

¹⁰⁴ Snead, *The Gaither Committee, Eisenhower, and the Cold War*, 139.

Gaither Report provided the rhetoric to solidify why the United States needed the following: a responsive strike capability (ICBM), a flexible offensive capability (bomber aircraft), and a survivable second-strike capability (SLBM).¹⁰⁵ Traditionally, SAC forces consisted of long and medium-range bombers designed to drop nuclear bombs deep within the Soviet Union. Naval tactical aviation would also deliver atomic bombs but due to the short range of these aircraft and the long range of SAC aircraft, target sites were by default relatively de-conflicted.

However, with emerging ballistic missile capabilities, both the Navy (Polaris SLBM) and Air Force (Atlas and Titan ICBM) could strike long-range targets. The practice of redundant targeting also began to emerge as the US arsenal grew in size and destructive power.

Hickey Report

In 1955, at the request of the JCS, SAC hosted the first Worldwide Coordination Conference. During these annual conferences, senior military commanders with responsibility for nuclear plans as identified in NSC-30 submitted nuclear target lists for deconfliction with other theater commanders and SAC.¹⁰⁶ Under the direction of the JCS, each commander responsible for a geographic area containing nuclear targets developed a nuclear war plan. By 1958, these various war plans

¹⁰⁵ Snead, *The Gaither Committee, Eisenhower, and the Cold War*, 139.

¹⁰⁶ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 12.

contained some 300 duplicate target strikes.¹⁰⁷ The JCS, concerned these duplicate strikes would lead to fratricide of friendly aircraft and weapons, decided to conduct a review of the separate targeting plans of the Navy and Air Force.¹⁰⁸

On December 1, 1958, President Eisenhower assigned Army Lieutenant General Thomas Hickey to conduct a targeting study for the Net Evaluation Sub Committee. The President commissioned the study, titled Net Evaluation Sub Committee Study 2009, to assess “the relative merits, from the point of view of effective deterrence, of alternative retaliatory efforts directed toward 1) primarily a military target system, or 2) an optimum mix of a combined military-urban industrial target system.”¹⁰⁹

The Hickey Committee submitted its report to the JCS in February 1960. The report identified 2,021 targets representing an optimum mix of military and industrial base targets, as reflecting the “proper” targeting doctrine. The committee used target selection methods similar to the established SAC methods. It selected targets against Soviet nuclear delivery capability and war supporting infrastructure. These targets reflected the same principles of targeting established at ACTS as the Industrial Web theory. While striking aerial defenses, radar sites, and enemy forces was essential to enabling the attack, the disabling blows

¹⁰⁷ Rosenberg, “U.S. Nuclear War Planning, 1945-1960,” 51.

¹⁰⁸ Rosenberg, “Origins of Overkill,” 172.

¹⁰⁹ Ball and Richelson, *Strategic Nuclear Targeting*, 61.

were aimed for the war-supporting infrastructure of the Soviet industrial capability. As an endorsement of this targeting philosophy, Eisenhower directed the Hickey Report be the “point of departure” for all future JCS planning.¹¹⁰ Ultimately, Eisenhower’s directive forced the services to work together and develop an integrated target list.

Eisenhower Orders SIOP

Due to the recent directive to coordinate and de-conflict the nuclear target lists, General Thomas S. Power, having succeeded LeMay as SAC commander, recommended control of all nuclear forces be placed under SAC. The Navy disagreed.¹¹¹ On June 14, 1960, SAC presented a proposal to Secretary of Defense Thomas S. Gates Jr. entitled “Unity in the Strategic Offensive.”¹¹² This proposal argued for the development of a Joint Strategic Target Planning Agency to produce a National Strategic Target List (NSTL) and a SIOP.¹¹³ Secretary Gates was highly interested in the integration of military planning, but he had doubts about the ability of the military services to work together on a single plan.¹¹⁴

Previously, in August 1959, Air Force General Nathan Twining, CJCS, posed eighteen questions regarding targeting to the JCS in an effort to clarify targeting policy. The questions included fundamental

¹¹⁰ Rosenberg, “Origins of Overkill,” 172.

¹¹¹ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 18-19.

¹¹² Kaplan, *The Wizards of Armageddon*, 264.

¹¹³ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 28.

¹¹⁴ Kaplan, *The Wizards of Armageddon*, 264.

inquiries such as what should our targeting policy be and what categories of targets should it cover? However, by the time of the SAC proposal briefing, ten months after posing these questions, the Chiefs could not yet agree on any of the answers.¹¹⁵ This confirmed Gates' suspicions regarding the inability of the services to work together.

On July 6, 1960, Secretary Gates met with President Eisenhower to relay the SAC proposal for creation of a JSTPS to maintain the NSTL and develop a SIOP. In addition, Secretary Gates proposed SAC headquarters at Offutt Air Force Base, Nebraska, as the SIOP Center.¹¹⁶ The nature of target analysis, weapon application, timing de-confliction, and assessment of nuclear war planning were highly dependent upon data automation and SAC already possessed the necessary computer capability.¹¹⁷ Eisenhower did not want to grant control of the task to just one service but agreed to the proposal, stating that the "original mistake in this whole business, was our failure to create one single Service in 1947."¹¹⁸

On August 11, 1960, Secretary Gates met again with President Eisenhower and the JCS to discuss the formation of the JSTPS. The Navy did not want SAC to control the NSTL and SIOP due to the ongoing

¹¹⁵ Kaplan, *The Wizards of Armageddon*, 264.

¹¹⁶ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 28.

¹¹⁷ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 28.

¹¹⁸ A. J. Goodpaster, MCP, July 6, 1960, Staff Notes, July 1960 Folder, Dwight D. Eisenhower Diaries, Box 51, ACWF-EPP, Dwight D. Eisenhower Presidential Library and Museum, Abilene, KS.

practice of bootstrapping that already led the Air Force to claim forty-seven percent of the defense budget. After much discussion and heated debate Eisenhower said, "This was not a good way to respond to serious military problems, nor did it speak too well of the ability of good men to get together and work out solutions in the nation's interest."¹¹⁹ In light of the enormous nuclear arsenal, military predelegation, and the overarching strategy of Massive Retaliation, Eisenhower declared, "There must be agreement that rigid planning is needed."¹²⁰

On August 16, 1960, Secretary of Defense Gates ordered creation of the Joint Strategic Target Planning Staff (JSTPS) at SAC headquarters and development of a SIOP for nuclear war. However, he issued a deadline of mid-December 1960 to drive completion prior to the change in presidential administrations. The JSPTS formed with SAC commander General Power as the Director, Strategic Target Planning. The JSPTS consisted of two production units. The units were the National Strategic Target List Division and the Single Integrated Operational Plan Division.¹²¹ Each took their names from the work they performed. Personnel assigned to the JSTPS consisted mainly of existing SAC planners: SAC assigned 140 officers, 57 airmen, and 22 civilians. The Navy assigned 29 officers while the Army assigned 10 officers, and the

¹¹⁹ Rosenberg, "Origins of Overkill," 5.

¹²⁰ Rosenberg, "Origins of Overkill," 5.

¹²¹ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 17.

Marine Corps assigned 3 officers. The Air Force augmented an additional 8 officers to assist SAC's efforts.

SIOP Development

The JSTPS relied on two documents to provide official policy guidance for preparation of the SIOP: the National Strategic Targeting and Attack Policy (NSTAP) and Guidance for the Preparation of the Single Integrated Operational Plan for Strategic Attack.¹²² The NSTAP, issued by the JCS, directed that the NSTL "will consist of a minimum number of specific targets whose timely and assured destruction will accomplish the specific objective."¹²³ In order to organize the staff and effectively coordinate the target list, SAC held a series of SIOP planning conferences at SAC headquarters in Omaha. During the initial SIOP planning conference on August 24, 1960, debate ensued over how to interpret the NSTAP guidance. The naval planners interpreted this guidance to mean the NSTL will contain just enough targets on the list to "accomplish the specific objectives."¹²⁴ However, General Bob Smith, SAC intelligence chief, directed planners to interpret the NSTAP guidance to mean there was a minimum number of targets, below which the SIOP committee could not go, but no upper limit on the number of targets on the NSTL.

¹²² History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 21.

¹²³ Rosenberg, "Origins of Overkill," 5-6.

¹²⁴ Rosenberg, "Origins of Overkill," 5-6.

This minor difference in interpretation of JCS guidance soon became a significant one.

Over the previous two years, the nuclear stockpile tripled in size from approximately 6,000 warheads in 1958 to 18,000 in 1960, and the target list kept pace.¹²⁵ The NSTAP required at least a seventy-five percent probability of destroying a target. General Power therefore set higher requirements on priority targets. The seven highest priority targets required ninety-seven percent probability of destruction. This meant assigning additional weapons to the targets in order to reach the correct probability of destruction. SAC calculations, however, only accounted for the blast effect of nuclear detonations for the probability of destruction. Other effects such as heat, fire, and radiation were too difficult to model. Therefore, the average target received 2.2 nuclear weapons, amounting to several megatons.¹²⁶ When Eisenhower received news of these exaggerated weapons requirements, he decided to send his science advisor to SAC in order to assess the planning.

George Kistiakowski was Chairman of Eisenhower's Science Advisory Committee. He previously worked on the Manhattan Project and understood nuclear weapons. On November 3, 1960, Kistiakowski traveled to SAC headquarters to assess planning progress. Having heard reports about SAC's hostility toward civilian oversight and the turning

¹²⁵ Loeber, *Building the Bombs* 83.

¹²⁶ Kaplan, *The Wizards of Armageddon*, 268.

away of visitors on grounds of insufficient security clearance, President Eisenhower wrote a letter to SAC stating that Kistiakowski be granted about “as much authority as the Secretary of Defense.”¹²⁷ Unfortunately, General Power, LeMay’s successor as SAC’s commander did not welcome Kistiakowski as the President’s representative. In a showing of defiance, he did not meet Kistiakowski and his team at the airport in accordance with protocol. Instead, General Power blocked Kistiakowski’s access and avoided contact with him.

Upon receiving the SIOP briefing, Kistiakowski found that SAC was manipulating the calculations on the probability of damage in order to argue for more forces.¹²⁸ He reported that decisions made in planning were arbitrary and the highly technical computer procedures were “sheer bull,” noting that the SIOP was “made up of a background of plenty”¹²⁹ in weapons and delivery systems. He asserted that, “I believe that the alert force is probably all right, but not the follow-on forces which carry megatons to kill 4 and 5 times over somebody who is already dead.”¹³⁰ Despite Kistiakowski’s findings, Eisenhower allowed the SIOP to proceed as planned. Kistiakowski was unaware, but Eisenhower wanted his advisors to believe he was ready to “unleash an all-out holocaust” in the

¹²⁷ Feaver, *Guarding the Guardians*, 60.

¹²⁸ Desmond Ball, *Adelphi Paper No. 185: Targeting for Strategic Deterrence*, 41.

¹²⁹ Rosenberg, “U.S. Nuclear War Planning, 1945-1960,” 65-66.

¹³⁰ Rosenberg, “U.S. Nuclear War Planning, 1945-1960,” 65-66.

event of war with the Soviet Union.¹³¹ Eisenhower did not believe a limited war was possible because nations would not surrender when they still possessed nuclear weapons. The SIOP provided the all or nothing approach Eisenhower wanted in order to deter general war with the Soviet Union.¹³²

Thus, on December 2, 1960, Secretary Gates, the JCS, and President Eisenhower were briefed on the completed SIOP. The plan, named for the upcoming fiscal year 1962, thus earning the designation as SIOP-62, called for launching the entire arsenal of 3,267 nuclear weapons against the Sino-Soviet bloc.¹³³ During the briefing, the Commandant of the Marine Corps, General David Shoup asked, "What would happen if China were not fighting in the war? Do we have any option that we don't have to hit China?"¹³⁴ General Power replied that it was possible but "would really screw up the plan." General Shoup then stood before Secretary Gates and exclaimed, "Sir, any plan that kills millions of Chinese when it isn't even their war is not a good plan. This is not the American way."¹³⁵ Shoup's criticism represented the controversy SIOP-62 brought to the Department of Defense. After hearing the SIOP briefing, President Eisenhower confided in his naval

¹³¹ Campbell Craig, *Destroying the Village: Eisenhower and Thermonuclear War* (New York, NY: Columbia University Press, 1998), 114.

¹³² Craig, *Destroying the Village*, 111.

¹³³ Scott D. Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," *International Security* 12, no. 1 (Summer, 1987): 22-51.

¹³⁴ Kaplan, *The Wizards of Armageddon*, 268.

¹³⁵ Kaplan, *The Wizards of Armageddon*, 268.

advisor, Captain E. P. Aurand, that the plan “frightened the devil out of me.”¹³⁶ Acknowledging the massive overkill built into the plan, he made it known, “we’ve got to get this thing right down to the deterrence.”¹³⁷

The SIOP briefing provided a forum for military and civilian leaders to discuss, debate, and disagree over the effectiveness of the nuclear war plan, but generated no substantial changes. Despite these criticisms, the JCS, Secretary Gates, and President Eisenhower approved the SIOP to go into effect on April 1, 1961.¹³⁸

Conclusion

In the years following WWII, the “mass movement” of airpower ended and the doctrine of strategic bombing became the institutional norm. Nuclear war planners and writers of nuclear doctrine faced strong institutional influence to adopt conventional strategic bombing doctrine for nuclear planning. Unfortunately, vague presidential guidance and a lack of oversight led to the development of multiple war plans that included redundant targeting and potential weapon fratricide. President Truman’s reluctance to view the bomb as a military weapon, combined with policies of deliberate ambiguity regarding the use of nuclear weapons, left Strategic Air Command and the Joint Chiefs of Staff to determine independently how to target, plan, and organize for nuclear war. While policies such as NSC-30 and NSC-68 enabled SAC to

¹³⁶ Rosenberg, “U.S. Nuclear War Planning, 1945-1960,” 66.

¹³⁷ Rosenberg, “U.S. Nuclear War Planning, 1945-1960,” 55.

¹³⁸ Kaplan, *The Wizards of Armageddon*, 268.

establish the primacy of nuclear weapons for national defense, President Truman's policies failed to provide specific guidance for weapon employment.

President Dwight Eisenhower inherited a growing nuclear arsenal without a coherent employment strategy. During his tenure, Eisenhower made nuclear weapons more accessible to the military than any other president before or since by increasing the stockpile, providing a strategy, and predelegating their use. Unfortunately, SAC became driven by organizational isolation, leading to institutionalized groupthink regarding nuclear doctrine. The lack of guidance from the Truman Administration in the early years of nuclear planning combined with an increasing stockpile of weapons under the Eisenhower Administration fueled a divide between civilian and military leaders regarding control over employment of the nuclear arsenal. In an effort to regain control over the nation's nuclear capability, Eisenhower ordered a unique advance in war planning: formation of the first Strategic Integrated Operational Plan (SIOP). In addition, Eisenhower formed a joint staff organization to maintain a national target list known as the Joint Strategic Target and Planning Staff (JSTPS). In the fifteen years following the first use of atomic weapons, SAC developed an unprecedented nuclear capability and a system to harness that capability in order to wage nuclear war.

Chapter 4

The Doctrine of SIOP-62

The maximum use of force is in no way incompatible with the simultaneous use of the intellect.

- Carl von Clausewitz

On September 13, 1961, after nearly eight months in office, President John F. Kennedy met with his military advisors to review the nuclear war plan. General Lyman L. Lemnitzer, Chairman, Joint Chiefs of Staff, briefed President Kennedy on the details of the United States' plan for nuclear war, SIOP-62.¹ The briefing took place at the White House with Secretary of Defense Robert McNamara, Military Representative to the President General Maxwell Taylor, and Deputy Special Assistant to the President for National Security Affairs Walt W. Rostow.²

The briefing revealed the nuclear war plan developed in four months at SAC. However, the plan actually represented airpower theory developed over the previous forty years. The SIOP briefing demonstrated the Air Force's commitment to airpower theories first embraced by ACTS in the 1920s and updated for the nuclear age. The theories of the offensive nature of airpower, strategic bombardment to bypass enemy forces and strike deep into enemy territory, and "industrial web" targeting to strike "vital centers" were all present in the SIOP. Essentially, SIOP-62 was the legacy of AWPD-1 developed twenty years earlier in 1941 and re-shaped for the atomic age.

SIOP-62 was the President's most grave responsibility. While President Kennedy understood the basic outline of the plan, over the

¹ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 22.

² Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 22-51.

next two hours, he would learn the disturbing reality about “his” plan for nuclear war.

SIOP Background

As General Lemnitzer began the briefing, he reviewed the chronology of the SIOP and reminded President Kennedy of the following events. On February 12, 1960, President Eisenhower approved the recommendations of the Hickey Report, or Study No. 2009, and sent it to the Joint Chiefs to use as a basis for nuclear planning.³ In August 1960, the JCS developed the National Strategic Targeting and Attack Policy (NSTAP) based on the findings of the Hickey Report as guidance to Strategic Air Command. General Lemnitzer identified the specific objectives outlined in the NSTAP:

To destroy or neutralize Sino-Soviet Bloc strategic nuclear delivery capability and primary military and government controls of major importance, and
To attack the major urban-industrial centers of the Sino-Soviet Bloc to achieve the general level of destruction as indicated in Study No. 2009.⁴

To achieve these objectives the NSTAP directed formation of a National Strategic Target List (NSTL) and a Single Integrated Operational Plan (SIOP). The NSTAP provided the bureaucratic guidance to the nuclear planners.

The JCS appointed General Thomas Power, Commander-in-Chief, Strategic Air Command, as Director, Strategic Target Planning and issued him the task of developing and maintaining the NSTL and SIOP. On December 2, 1960, President Eisenhower approved the SIOP with an effective date of April 15, 1961. The NSTL began as a list of 80,000 potential targets known as the Bombing Encyclopedia. The Joint Strategic Target Planning Staff (JSTPS) narrowed the list to 2,729 installations. These installations were then consolidated into 1,067

³ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 43.

⁴ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 44.

designated ground zeros (DGZ). General Lemnitzer's briefing included extensive maps depicting the DGZs of target locations. The countries containing identified DGZs were the Soviet Union, the People's Republic of China and their allies in Eastern Europe.⁵ General Lemnitzer pointed out to Kennedy that, "[t]his map will give you a feel for the geographic distribution of DGZs within the Sino-Soviet Bloc. Each red circle represents one actual DGZ. No attempt has been made to differentiate as to size or importance."⁶ Realizing he had come to receive a briefing about the war plans against the Soviet Union, Kennedy stopped the briefing to ask, "Why do we hit all those targets in China, General?" General Lemnitzer merely replied "It's in the plan, Mr. President."⁷ Kennedy became notably upset at the general's answer. Kennedy already harbored resentment toward the JCS over the Bay of Pigs incident where military advisors neglected to voice concerns over the risk associated with the Cuban invasion. Lemnitzer's response highlighted the casual attitude toward planning assumptions that drove the massive and indiscriminate strike options. This blind adherence to target selection based upon achieving military effects ignored the political reason for waging war. It essentially removed the essence of war strategy from the plan by ignoring the political objectives. Unfortunately, Eisenhower's policies did not identify a political end state for war. The Hickey Report outlined two broad national objectives: deter hostilities and prevail in the event of general war.⁸

⁵ Henry S. Rowen, "Formulating Strategic Doctrine," *The Report of the Commission on the Organization of the Government for the Conduct of Foreign Policy* (Washington, DC: U.S. Government Printing Office, 1975), part 3, vol. 4, app. K, quoted in Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 44.

⁶ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 44.

⁷ Richard Reeves, *President Kennedy: Profile of Power* (New York: Simon & Schuster, 1993), 230.

⁸ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 43.

SIOP Assumptions

During the briefing, General Lemnitzer noted that the SIOP represented the strategy of Massive Retaliation, as identified in NSC-162/2. According to that strategy, posturing forces for a massive retaliatory strike was the primary method for deterring the enemy from launching a first strike. While a US first strike was possible using this plan, the SIOP planners based their planning on three assumptions. First, the United States would not initiate a nuclear war. Second, the Soviet Union would see military weakness as an opportunity to seize the initiative and conduct a first strike to disable the United States' ability to retaliate. Third, once nuclear war began all available weapons needed to be launched in a "use them or lose them" scenario.⁹ These assumptions match basic deterrence doctrine assumptions.

According to Barry Posen, deterrence is the "persuasion of one's opponent that the costs and/or risks of a given course of action he might take outweigh its benefits."¹⁰ A deterrent doctrine requires military forces capable of inflicting enough punishment that the adversary decides it is ultimately unwilling to bear the cost. Similar to defensive doctrines, deterrent doctrines relinquish the initiative to the enemy as identified in the planner's first assumption that the US would not initiate a nuclear war. However, the second assumption identifies the Soviet threat. Therefore, the military forces are postured and ready to act, but only after provocation. However, once provoked the state should have a force sufficiently strong enough to inflict a punishing blow upon the aggressor. The SIOP certainly had sufficient force to punish the Soviet Union, but a doctrine based solely on deterrence does not require a force strong enough to destroy the enemy, but just enough to inflict sufficient levels of destruction in order to deter hostilities.¹¹ The third assumption

⁹ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 15.

¹⁰ George and Smoke, *Deterrence in American Foreign Policy*, 11.

¹¹ Posen, *The Sources of Military Doctrine*, 24.

is what troubled President Kennedy. The “use them or lose them” assumption meant that at the slightest indication of hostilities the forces that were so eagerly postured for massive response must be launched without hesitation. This immediacy altered the conventional deterrence equation and created a doctrine prone to offensive action.

The SIOP did not contain tailored options, gradual escalatory strikes, or programed termination points. Instead, the plan included launching every available weapon in the nuclear arsenal at every enemy DGZ and all at once. Lemnitzer pointed out that “according to the guidance in the NSTAP, the SIOP should only plan for the initial attack.”¹² Therefore, the SIOP contained a single massive delivery of forces. The plan afforded no second strike opportunity; hence, no forces were withheld in reserve.

SIOP Forces

The weapons committed to SIOP-62 included 3,267 nuclear weapons from 112 bases worldwide. SAC, Pacific Command, Atlantic Command and European Command all provided nuclear forces to the SIOP. The forces committed to the SIOP included 880 bomber aircraft, ninety-six Polaris submarine launched ballistic missiles (SLBM) and sixty-four Atlas and Titan intercontinental ballistic missiles (ICBM).¹³ While the bombers and ICBMs belonged to the Air Force, the SLBM forces were Navy assets. Regardless of service affiliation, the SIOP committed every available nuclear weapon to the strike plan. Warhead strength varied from ten kilotons to twenty-three megatons. The massive target list drove use of all available forces. This focus on using all available weapons meant the SIOP was a capability-based plan: it did not account for scenarios with varying objectives based upon the threat or enemy actions. The SIOP became binary plan giving the president one

¹² Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 43.

¹³ Botti, *Ace in the Hole*, 132.

decision to make: launch all weapons or none at all. This meant that the SIOP was a plan void of any practical strategy.

SIOP Options

General Lemnitzer outlined the execution options contained in SIOP-62. He explained that the plan contained fourteen options, each based on preparation times of up to fourteen hours, as follows:

Option 1: (Alert Option) 1,004 delivery systems immediately available to launch carrying 1,685 weapons.

Options 2-13: (Time-based Options) These options required a set amount of time to prepare for launch. Each successive option required an additional hour of warning in order to be available for launch.

Option 14: (Strategic Warning Option) this option launched the entire inventory of 2,244 delivery systems, carrying in total 3,267 weapons. It required a minimum of fourteen hours to generate these systems to alert status in order to launch.¹⁴

While General Lemnitzer presented the plan as a series of options available to the President, the amount of strategic warning prior to launch determined the amount of generation time available. The warning time then determined the option because SAC built the plan to launch all available forces. Therefore, the SIOP contained only one real option: a massive strike option to launch all weapons available at the time the order was given. The more warning time available to generate forces, the larger the “option.”

SIOP Flexibility

During the briefing, General Lemnitzer acknowledged that Secretary of Defense McNamara had already directed efforts to increase the flexibility of the SIOP. He devoted the final minutes of his time with President Kennedy to making the case that SIOP-62, as drafted, was a sufficiently flexible plan. He outlined the following flexible features of the

¹⁴ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 48.

SIOP: First, the SIOP could be executed as a total plan, either in retaliation to a Soviet nuclear strike on the US or as a preemptive measure. (The ballistic missiles covered by the plan were assigned alternate targets for the two conditions of retaliation and preemption.) Second, strikes could be withheld against targets in any or all of the satellite nations (countries of the Warsaw Pact in Eastern Europe) except for defensive targets.¹⁵ The defensive targets included any anti-aircraft or radar sites. Since the USSR set its defenses along the perimeter of its border, the majority of sites in the satellite countries were classified as defensive targets. General Lemnitzer's claim that the plan was sufficiently flexible to withhold weapons against certain targets was only partially true. He revealed this in his statement regarding the risks. "Thus, withholding of a portion of the planned attack could degrade our plan and the forces committed to the point that the task essential to our national survival might not be fulfilled."¹⁶

Secretary McNamara highlighted a key strategic shortcoming of the SIOP's lack of flexibility. He disapproved of the assumption that the US would need to strike all countries at once without withholding weapons against countries not actively involved in the war. For example, McNamara identified the country of Albania. While Albania, an independent communist nation, was breaking diplomatic relations with the Soviet Union, it still contained a Soviet air-defense radar. The plan required destruction of the radar to ensure success in war with the Soviet Union. Unfortunately, due to the method of calculating expected damage, the strikes also essentially obliterated the small country.¹⁷

President Kennedy immediately recognized the inability to exclude non-belligerent countries as a lack of flexibility in the plan. General Lemnitzer added to Kennedy's discomfort with the SIOP by stating, "there

¹⁵ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 50.

¹⁶ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 50.

¹⁷ Kaplan, *The Wizards of Armageddon*, 271-272.

is no effective mechanism for rapid rework of the plan after order for its execution.”¹⁸ He went on to caution the President that “it must clearly be understood that any decision to execute only a portion of the entire plan would involve acceptance of certain grave risks,”¹⁹ meaning either Soviet offensive capabilities would remain or necessary defensive targets would not be eliminated putting US bombers at risk. The general made it clear that “the plan is designed for execution as a whole.”²⁰

SIOP Targets

The SIOP planners selected targets that represented an “optimum mix” of military and urban-industrial targets in the Sino-Soviet bloc countries.²¹ These countries included “the USSR, the People's Republic of China, and allies of these two powers in Eastern Europe and elsewhere.”²² The majority of targets covered by the SIOP were military in nature. For example, of about 1000 DGZs covered by the plan, approximately 800 were military targets. However, General Limintzer noted that because nuclear weapons are relatively non-discriminating, particularly with respect to fallout, the proximity of many of those targets to urban-industrial centers would make strikes against military versus civilian targets indistinguishable to the Soviets.²³ The selection of targets deemed as vital military and urban-industrial targets followed the targeting philosophy established at ACTS and employed in the combined bomber offensive during WWII. SIOP-62 was the legacy of AWPD-42 utilizing strategic bombardment doctrine and industrial web targeting for nuclear warfare.

¹⁸ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 50.

¹⁹ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 50.

²⁰ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 50.

²¹ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 32.

²² Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 44.

²³ Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 50.

Kennedy's Assessment

While President Kennedy did not directly influence the formation of SIOP-62, his administration did provide an assessment of the operational level planning conducted by SAC. The Kennedy administration had four main critiques of SIOP-62.

1. Non-Discriminate Targeting. SIOP-62 did not discriminate among enemies. Kennedy clearly understood the moral and ethical dilemma of bombing countries without a declaration of war. SIOP-62 assumed that once nuclear war began all bombs must be launched in a use them or lose them effort. This prevented the United States from dividing the enemy and using diplomacy against China, who did not possess nuclear weapons, while fighting against the Soviet Union. Kennedy's military advisor, Maxwell Taylor, pointed out that "SIOP-62 is a blunt instrument."²⁴

2. Lack of Flexibility. SIOP-62 did not allow for a limited attack or a response-in-kind to a limited attack. The only response to a limited nuclear attack from the Soviet Union was a full-scale counter-attack. General Lemnitzer noted that the SIOP was intended to be executed as a whole and executing only a portion of the SIOP would pose a significant risk.²⁵ Per NSTAP guidance, the SIOP needed to destroy or neutralize Sino-Soviet strategic strike forces and major military and governmental control centers, and to strike urban-industrial centers to achieve the level of destruction indicated in the Hickey Report.²⁶ The NSTAP objectives left no room for targets to remain following the SIOP strike because any remaining Soviet nuclear forces or industrial capacity would pose a threat of Soviet retaliation to the US. In 1960, after visiting SAC,

²⁴ David M. Kunsman and Douglas B. Lawson, *A Primer on US Strategic Nuclear Policy*, (Albuquerque, NM: Sandia National Laboratories, 2001), 45.

²⁵ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 49.

²⁶ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-62* (partially declassified and released by Joint Secretariat, Office of the Joint Chiefs of Staff, April 1980), 21.

George Kistiakowski, Eisenhower's Science Advisor identified this as excess, stating SAC forces "carry megatons to kill 4 and 5 times over somebody who is already dead."²⁷

3. No Reserve Forces. SIOP-62 did not hold forces in reserve for a follow-on attack. The full-scale, single strike plan launched all nuclear forces. The SIOP planners assumed whether the plan was a pre-emptive first strike or retaliation strike, Soviet nuclear forces would strike any American forces remaining. Therefore, planning for a second strike was not practical and all forces had to launch, again, in order to "use them or lose them."²⁸ This urgency shifted the deterrence doctrine Eisenhower envisioned toward an offensive doctrine. In 1957, General LeMay adamantly declared "If I see that the Russians are amassing their planes for an attack I'm going to knock the shit out of them before they take off the ground."²⁹ LeMay postured SAC forces to strike before Soviet planes took off in an attempt to assure no Soviet bomber reached the US. The combination of the NSTAP objective to destroy or neutralize Sino-Soviet strategic strike forces and the concern that Soviet forces would eliminate any US aircraft that did not launch caused SAC planners to commit all weapons to the first strike leaving no weapons in reserve.³⁰

4. Excessive Force. SIOP-62 did not plan for the minimum force required to achieve objectives. The concept of economy of force is particularly important for nuclear war. Planners must consider the unavoidable impact to the population when evaluating if the plan achieved the political objectives. As cited in the Hickey Report, the only national objectives given to SAC were to deter hostilities and to prevail in the event of general war.³¹ However, by issuing the NSTAP guidance, the

²⁷ Rosenberg, "U.S. Nuclear War Planning, 1945-1960," 65-66.

²⁸ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 50.

²⁹ Kaplan, *The Wizards of Armageddon*, 132.

³⁰ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, 21.

³¹ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 43.

JCS provided two military objectives to the SIOP planners. First, “to destroy or neutralize the Sino-Soviet bloc strategic nuclear delivery capability and primary military and government controls,” and second, “to attack the major urban-industrial centers of the Sino-Soviet bloc.”³² Unfortunately, the nature of these objectives allowed for use of a broad range of military force and did not provide an easy means of assessment.

The SIOP briefing revealed Kennedy’s operational war plan had only one option, a single all-out strike against every imaginable adversary. Kennedy was furious. The United States’ operational plans for nuclear war did not reflect Kennedy’s national security strategy and was virtually unusable. As Kennedy left the briefing he turned to Secretary of State Dean Rusk and commented regarding the indiscriminate nature and massive overkill of the SIOP, “And we call ourselves the human race.”³³

Conclusion

Upon hearing the initial briefing of SIOP-62, President John F. Kennedy immediately rejected the plan as too rigid. Kennedy wanted a plan that provided the flexibility to be useful as an instrument of politics. SIOP-62 reflected decades of organizational lessons dogmatically applied to create a comprehensive plan for an untested weapon. It is the result of Strategic Air Command’s “systematic isolation” of its officers from any diversity of experience and insulation of its planning from any critical outside observers resulting in institutional groupthink and deep-rooted planning assumptions.

While SIOP-62, developed under Eisenhower, represented a significant advance in war planning, Kennedy rejected the extremely rigid plan. Prior to SIOP development, nuclear targeting was coordinated after

³² Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 15.

³³ Reeves, *President Kennedy Profile of Power*, 230.

the fact, handicapping mutual support and economy of force.³⁴ The SIOP coordinated the various service and command plans that previously existed and accounted for mutual support of forces. The SIOP-62 briefing revealed the degree to which the JSTPS approached the nuclear planning task mechanically, designing an inflexible, overwhelming nuclear offensive to destroy the "optimum-mix," of Sino-Soviet bloc targets.³⁵ All other strategic considerations appear to have been ignored to achieve a single Massive Retaliatory strike. While President Eisenhower approved SIOP-62, President Kennedy immediately dismissed the plan ruling it and the strategy of Massive Retaliation obsolete.



³⁴ History and Research Division, Headquarters Strategic Air Command, *History of the Joint Strategic Target Planning Staff*, April 1980, 28.

³⁵ Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," 35.

Chapter 5

Conclusion

Nothing fails like success.

- Robert Jervis

This paper traces the development of nuclear doctrine back to the early 1920s when the Air Corps Tactical School opened and began teaching air tactics. The eventual development of strategic bombing doctrine and the “industrial web” theory of targeting formed the basis for the Combined Bomber Offensive (CBO) in WWII. The perceived success within the newly independent US Air Force in 1947 of the CBO led to strategic bombing and “industrial web” targeting’s acceptance into the mainstream thought of the service. Once institutionalized, these ideas became the backbone of the bureaucracy. Preservation of these ideas became both the cause and the symptom of organizational isolation and Air Force groupthink. This chapter reiterates the importance of doctrine, how it should be developed, and recommends ways the Air Force can avoid similar mistakes in the future.

What is Doctrine?

Doctrine is the military’s answer to the question of how best to fight a war. For military forces, doctrine is the bridge between theory, strategy and operations. It stems from military theory and provides strategic options to military planners. Doctrine reflects the judgment of military professionals regarding what is possible and necessary to conduct operations. It is the operationally relevant, agreed upon best practices for how the military organizes and employs forces for war.¹

¹ US Air Force, *The Value of Doctrine* (Maxwell Air Force Base, AL: LeMay Doctrine Center slideshow, <https://doctrine.af.mil/> Doctrine for Newcomers, accessed 15 March 2016).

For the ACTS theorists, strategic bombing emerged as the dominant doctrine based on nearly 20 years of debate and testing. Following Allied victory in WWII, the US Air Force, believing strategic bombing had “worked” in both Europe and the Pacific, turned to it as the proven doctrine to prepare for future wars. While the political goal in WWII was total surrender, SAC planners did not have a definite political objective. The NSTAP identified military objectives to destroy Sino-Soviet strategic forces, but Eisenhower’s only political objectives, as outlined in the Hickey Report, were to deter hostilities and to prevail in the event of general war.² Eisenhower’s policies did not provide a vision for an endstate beyond massive retaliation against the Soviet Union. Therefore, SAC planners based nuclear targeting, weapon allocation, and strike option formation decisions on the familiar ACTS principles of strategic bombing.

Why is Doctrine Important?

Simply put, military doctrine's ultimate purpose is to ensure the survival of the state. However, military doctrine may also harm the security of the state if it is not integrated with the political objectives of the state's grand strategy. Military doctrine can affect the security interests of the state in two ways. First, the nature of the prevailing doctrine selected by the state--offensive, defensive, or deterrence--determines the character of its international relations. However, intentions are difficult to discern. Typically, defensive and deterrence doctrines can project an intention of maintaining the status quo, while offensive military doctrines can pose a security dilemma for other states and can make arms races and wars more likely. Second, if the military doctrine employed by the state does not align with the state's political objectives, then adversaries will not take the political leaders seriously. For example, a state with an offensive doctrine is unconvincing when

² Sagan, “SIOP-62: The Nuclear War Plan Briefing to President Kennedy,” 43.

claiming only self-defense. Therefore, ensuring military doctrine aligns with the political objective is important to achieve military objectives and maintain political legitimacy.

How should we Develop Doctrine?

As Barry Watts points out, modern doctrine ignores the role of friction in war. Many of the issues in this study highlight the Air Force's focus on capability-based plans that do not take into account friction. Clausewitz provides the best explanation of this term. Friction is the force that makes the apparently easy so difficult. Clausewitz warns that countless minor incidents—the kind you can never really foresee—combine to lower the general level of performance, so that one always falls far short of the intended goal.³ Both AWPD-42 and the SIOP represent operational plans created by insulated organizations that failed to account for friction.⁴ While the SIOP appears to compensate for friction with overwhelming force against all targets to ensure their destruction, SIOP planners failed to account for various other manifestations of friction by having options that strike selective countries or reserve forces that allow for follow-on strikes after assessing the initial attack.

What can the AF learn from this?

Organizations that isolate themselves develop toxic levels of group think, cognitive closure, and unknowingly adopt policies to reinforce faulty assumptions. Robert Jervis published a landmark study of psychological factors affecting decision-making. In this study, Jervis explains that when an event affects the perceptual predispositions of many members of an organization then it is appropriate to discuss organizational learning.⁵ Organizations institutionalize these lessons in

³ von Clausewitz, *On War*, 119-121.

⁴ Watts, *Foundations of Doctrine*, xv.

⁵ Jervis, *Perception and Misperception*, 238.

books, rules, and even language itself. Experience is the best teacher and collective experience is how organizations learn.

Organizational lessons evolve into working assumptions or rules of thumb that impact future planning. Unfortunately, organizations identify false lessons or misapply correct lessons due to oversimplifying the causes, ignoring the context, or overgeneralizing success versus failure of an experience.⁶ Jervis notes that once a lesson is learned and categorized, decision makers tend to apply the lesson to any situation deemed remotely similar. It is important therefore to identify the proper lessons from experience and know when to apply the lesson to future situations. The following are four categories of lessons that can lead to misidentifying the cause of an outcome.

Impact of Constant Factors

People living in a period characterized by a particular kind of factor will tend to see a new and different one as though it fit the familiar pattern.⁷ ACTS instructors, and later AWPD-1 planners, applied a mirror image assessment of the US economy to all industrial nations when developing the industrial web targeting theory. Additionally, SAC's assessment of targeting criteria for destruction of Soviet war making capacity, driven by the acceptance of strategic bombing doctrine and the apparent lessons of WWII, applied a similar mirror image assessment. These planning assumptions escaped any critique by planners and theorists and evolved into hard-and-fast rules for determining vital nodes of a nation for targeting.

Lessons about Specific Actors

An actor's contact with another on an important issue can establish so firm an image of him that it will be very hard to dislodge.⁸ A

⁶ Jervis, *Perception and Misperception*, 229-235.

⁷ Jervis, *Perception and Misperception*, 271.

⁸ Jervis, *Perception and Misperception*, 272

strong distrust set in between the US and the USSR following the end of WWII. SAC planners saw the Cold War as an ideological struggle with communism. In a letter to President John F. Kennedy, McGeorge Bundy, National Security Advisor assessed the SIOP as “a massive, total, comprehensive, obliterating strategic attack on everything Red.”⁹ The planners viewed Moscow as ruling the entire Soviet bloc; therefore, all communist countries and their allies became equal targets for the SIOP. Planners did not see a need to develop separate options for various countries because of the assumption that a war against one communist country meant war with all of the countries. This assumption allowed SAC planners to ignore the need to identify a single enemy and therefore create multiple country options when developing the SIOP. Because planners required the ability to immediately execute the SIOP leaving no time to redirect weapons, the SIOP targeted all countries at once.

Reactions to Failure

Decision makers avoid policies that have failed in the immediate past.¹⁰ Upon taking command of SAC, General Curtis LeMay determined the organization suffered from a lack of proficiency resulting from loose standards. He immediately applied organizational controls of strict discipline and unquestioned obedience to doctrine and procedures to remedy the problem. However, the controls also stifled the critical thinking and healthy debate needed to ensure planning assumptions remain valid.

Nothing Fails Like Success

When a policy brings notable success, people tend to apply it to a range of later situations.¹¹ SAC developed a bootstrapping system because it reinforced the organization's need for manpower, equipment and budget

⁹ Reeves, *President Kennedy Profile of Power*, 229.

¹⁰ Jervis, *Perception and Misperception*, 275.

¹¹ Jervis, *Perception and Misperception*, 278.

share. SAC's bootstrapping method continually used intelligence on enemy systems to identify new targets. Additional targets required additional weapons, planes, and aircrews. As the organization grew, so did its appetite for intelligence collection that, in turn, produced more targets. This process reinforced success in the bureaucracy so absolutely, SAC ignored the obvious problem of an ever-growing target list divorced from politics and strategy until it was rejected by President Kennedy.

Recommendations

This paper makes the following recommendations to Air Force leadership to avoid these organizational pitfalls.

1. Hire for diversity. Diversity is not a group of people that look differently from one another. It is a group of people who have varied training, education, and life experiences. To avoid groupthink an organization must seek out individuals that bring new and innovative ideas to problem solving.

ACTS instructors famously grappled with large issues of how best to employ airpower. The diverse background of aviators (pursuit, attack, bomber) fueled debates and sparked innovation. One of the strongest debates at ACTS was the use of pursuit aircraft to gain air superiority or to defend bombers as their primary mission. Claire Chennault is recognized as the most outspoken advocate of pursuit aviation. When Chennault retired in 1937, the voices of bomber aviation dominated the debate. In 1941 when the AWPD staff (all bomber pilots and graduates of ACTS) wrote AWPD-1 they failed to account for fighter escort of bombers. Many crews and aircraft were lost due to the faulty acceptance of bomber invincibility.

2. Develop critical thinkers. Critical thinking is developed as a skill and must be practiced regularly to ensure proficiency. Often military organizations value decisiveness or efficient procedures over critical

thinking. Critical thinking enables effective planning and avoids adopting faulty lessons that lead to repeated mistakes.

ACTS established a healthy culture of questioning doctrine. According to Claire Chennault, students grappled with questions of the nature and object of war. However, when ACTS closed in 1940, many officers no longer experienced a culture of intellectual stimulation. In SAC, General LeMay refused to send officers to attend Air University, the heir of the ACTS legacy. LeMay told officers if they wanted to learn about airpower there was no better place than SAC.¹² In 1961, the same year President Kennedy received the SIOP briefing, LeMay, as Air Force Chief of Staff ensured all combat general officers were SAC alumni.¹³

3. Welcome critics. Critics provide an outside perspective to identify blind spots in planning better than any team member. Organizations that prevent critics from accessing products and observing processes risk committing errors that visitors might easily spot.

In the 1950s, when General LeMay was the commander of SAC, he claimed to have never discussed with the president or Air Force Chief of Staff what SAC would or should do with the strategic nuclear force. In fact, LeMay refused to submit SAC's basic war plans to the JCS from 1951 to 1955. In 1955, when formally requested by General Nathan Twining, Chief of Staff of the Air Force, LeMay finally provided a summary overview. Later, in 1959, President Eisenhower sent George Kistiakowski to SAC to report on SIOP planning. General Power, LeMay's successor as SAC's commander blocked Kistiakowski's access and avoided contact with him. The efforts by both General LeMay and General Power to shield SAC's operations from outside critics, contributed to planning assumptions that went unchecked until later

¹² Worden, *Rise of the Fighter Generals*, 142.

¹³ Worden, *Rise of the Fighter Generals*, 105-106.

confronted by President Kennedy and Secretary McNamara during the SIOP-62 briefing.

Conclusion

The military like all bureaucracies is an organization intent on self-preservation. If isolated from outside influences and provided the right bureaucratic controls, it will, like any bureaucracy, develop mechanisms to justify vast increases in material, manpower, and money. SIOP-62 is the result of institutional isolation of doctrine, leadership, and innovation by the Air Force in general and SAC in specific. This paper discussed the policies and strategies from the dawn of the nuclear age. Specifically, this study examined the formation of air doctrine leading into nuclear doctrine and provided an evaluation of SIOP-62 as an instrument of bureaucratic control and overreach.



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